A Practical Guide to
Growing, Cooking & Crafting

LLEWELLYN'S

2026 HERBAL ALMANAC

Companion Planting, Gardening by the Moon, Garden Plans, and a 12-Month Gardening Log

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A Practical Guide to
Growing, Cooking & Crafting

LLEWELLYN
WOODBURY, MINNESOTA

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First e-book edition © 2025
E-book ISBN: 9780738778228

Cover Design by Kevin R. Brown
Editing and layout by Lauryn Heineman
Interior illustrations by Llewellyn Art Department
Plant illustrations on page 271 courtesy of Vecteezy

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Llewellyn Publications
Llewellyn Worldwide Ltd.
2143 Wooddale Drive
Woodbury, MN 55125
www.llewellyn.com

Manufactured in the United States of America

Contents

Introduction to Llewellyn's Herbal Almanac

Growing and Gathering

Small-Space Fruit Production
by Jordan Charbonneau
Breeding a Better Tomato
by Kathy Martin
The Art and Practice of Wild-Tending
by Mandana Boushee
Landscaping with Herbs in the Flower Garden
by James Kambos
Oh Deer! Critter-Resistant Herbs
by Elizabeth Barrette
The Community in Value-Added Production
by Mason Olonade

Cooking

How Sweet It Is: Preserving and Fermenting with Honey
by Monica Crosson
Open Ajonjolí!
by Linda Raedisch
Herbal Mocktails
Freezer Meals 101

Health and Beauty

Elimination Diets
by Mireille Blacke, RD, CD-N
Postpartum Herbs and Lore
by Rachael Witt
Gardening as Medicine

DIY and Crafts

How to Make a Compost Tumbler
by Laurel Woodward
How to Gather Pine Resin Without Sticking to Your Car
by Diana Rajchel
Eco-Printing Fabrics with the Bounties of Your Garden
by Annie Burdick

Plant Profiles

Plant Profiles: USDA Hardiness Zones
Potato *by Anne Sala*
Cranberry *by Marilyn I. Bellemore*
Hosta *by Charlie Rainbow Wolf*
Willow *by Natalie Zaman*

Gardening Resources

Special Feature! Learning to Garden in an Ever-Hotter World
by JD Walker
Companion Planting Guide
Cooking with Herbs and Spices
by Susan Pesznecker
Gardening Techniques

by Jill Henderson
2026 Themed Garden Plans
by Jordan Charbonneau
Planning Your 2026 Garden
2026 Gardening Log
with tips by Laurel Woodward
Gardening by the Moon

Contributors

Introduction to Llewellyn's Herbal Almanac

Thank you, readers, for joining us for twenty-seven years of herbal wisdom. It's been a pleasure to share tips, techniques, stories, and recommendations from around the world, and we hope this almanac will inspire you to bring a little green into your life.

Holistic care for the mind, body, and soul starts in the garden. While adapting to the new normal, people around the world have sought out sustainable lifestyles and made greener choices, asking how to grow and preserve organic food for their family or how to forage for a nutritious bounty in their own neighborhood. Growing herbs enriches the soul, and using them in home-cooked meals, remedies, and crafts is natural, healthy, and just plain delicious.

There is no better time to grow, use, and eat herbs than now, and we hope you'll find inspiration for your own healthy life in this book. With sage advice appealing to novice gardeners and experienced herbalists alike, our experts tap into the practical and historical aspects of herbal knowledge—using herbs to help you connect with the earth, enhance your culinary creations, and heal your body and mind.

In addition to the twenty-one articles written by Master Gardeners, nutritionists, homesteaders, and community herbalists, this book offers reference materials tailored specifically for successful growing and gathering. Use this book to plot this year's garden, practice companion planting, learn a new cooking technique, garden by the moon, find a helpful herbal remedy, and keep track of goals and chores.

Reclaiming our connection to Mother Earth in our own backyards can bring us harmony and balance—and a delicious, healthy harvest. May your

garden grow lush and your dishes taste divine!

[contents]

Growing and Gathering

Small-Space Fruit Production

Jordan Charbonneau

A home orchard is the dream for many aspiring homesteaders, backyard gardeners, and foodies. Fresh, homegrown fruit is not only much cheaper than its grocery store counterpart but also more nutritious and better tasting too.[1] There's no match for eating tangy, sweet raspberries as you walk through the garden or biting into a crisp apple on an autumn day.

For me, planting fruit trees also symbolizes the literal putting down of roots. Where I grew up in New England, many of the old farms were graced by gnarled old apple trees. Ever since, I associated fruit trees with having a "real farm."

Knowing me well, my best friends gave my husband and me a peach tree when we were first building our cabin. Standing against a backdrop of towering ashes, oaks, and maples, that little tree immediately gave the place a homey feeling. Years later, it has put on some good height and a few scars from a falling oak. Much like us, despite the challenges, it's still here and loaded with pink spring blossoms that ripen to juicy fruits each July. Its growth and constant presence in the front yard remind me how far we've come.

Small-Space Fruit Options

These days, I'm blessed with enough space to plant a small home orchard, but that wasn't always the case. Despite a general lack of space, I've cultivated fruit wherever I've lived and have always found it a worthwhile pursuit. Large standard apples were always part of the dream, but small

fruits still added an impressive weight to the garden, as though picking fruit made me more of a homesteader than picking tomatoes. If you share my passion for fruit, I have good news! Whether you have a suburban backyard, a city balcony, or a little patch of unused space on the farm, there's a fruit for you.

Strawberries

Strawberries might be the easiest fruit to grow on any homestead. They've got a lot going for them. I love tucking them into flower and herb gardens or around fruit trees for a surprise snack in the garden. They also tolerate container life well, so if your homestead's garden consists of a balcony, strawberries will help you grow your first orchard. Try planting them in window boxes or hanging baskets for extra efficiency.

I also find strawberries to be incredibly economical. Usually, you can purchase a good bundle of bare-root plants in the spring from a mail-order company. Once you have a patch started, strawberries send out runners that form new plants, allowing you to expand your garden, share with friends, or move some to your new homestead in the future.

There are many strawberry cultivars, and generally, they are all divided into two categories: June-bearers and ever-bearers. A simple explanation of these two types is that June-bearers produce just once a year, in spring or early summer. In New Hampshire, my June-bearers did fruit in June, but here in West Virginia, they fruit in May. These productive plants offer loads of berries over a few weeks, perfect for canning, freezing, drying, and fresh eating. The June-bearers may be further divided into early-, mid-, and late-season varieties depending on how quickly they fruit each season.

Ever-bearers, on the other hand, tend to fruit once in late spring and again in late summer or fall. They tend to produce less at once, making them less ideal for preservation, but their more extended fruiting period means they're an excellent choice for fresh use. If you have the space, I always recommend planting a few of each type.

Annual Fruits

Generally, we think of fruits as perennials or plants that live for more than one year, and many, like blueberries, apples, and pears, are all true perennials. However, there are a few fruits that you can grow as annuals that live for a single season. Some, like muskmelons (including cantaloupes) and watermelons, are easy to find at the grocery store, while others, like ground-cherries and garden huckleberries, are a little more unique.

Both muskmelons and watermelons grow as long, sprawling vines. If you let them have their way, they can take up a ton of space. However, you can trellis these plants. Some cultivars, especially larger watermelons, may need additional support for their fruit as it becomes heavy. Gardeners often use spare fabric or pantyhose to create a sling that holds the fruit up on the trellis. Pantyhose is ideal because it stretches as the fruit grows. Generally, I recommend smaller varieties of muskmelons and watermelons, like those listed as icebox melons, for small spaces and trellises.

You can also grow muskmelons and watermelons in a container. However, they may require a lot more care. They need ample water to fruit, and you want to keep the soil consistently moist. They also need plenty of nutrients, so it’s best to give them a boost when they start flowering.

Garden huckleberries and ground-cherries are both in the Solanaceae, or nightshade, family, which also includes tomatoes, peppers, and eggplants. They share a similar growing style with their well-known cousins and are suitable for container or traditional gardens. However, you won’t be making eggplant Parmesan or salsa with these; they’re usually used to make jam.

Lowbush Blueberries

If you have been to a pick-your-own operation, the phrase *blueberry bushes* brings to mind images of towering, nearly treelike shrubs. Thankfully, for those of us who love blueberries, there is another option: lowbush blueberries.

These small shrubs usually only grow six inches to two feet tall. They have attractive spring blooms and autumn foliage, meaning you can sometimes sneak them into your landscaping even if you live in a

community with an HOA. They also tolerate life in containers quite well.

Unfortunately, most lowbush blueberries come from a species native to northern North America and are often only hardy to USDA zones 3 through 7 (see page 188–page 190). On the other hand, highbush blueberries are divided into two categories: northern and southern highbush. Blueberries are also pickier about their soil requirements than other fruits on this list and thrive in well-drained, moist, slightly acidic soil.

Do you think your small space doesn't matter? Urban agriculture contributes 15 to 20 percent of the global food supply.

The *Rubus* Brambles

The *Rubus* genus includes red raspberries, yellow raspberries, blackberries, and thimbleberries. These berries are native to the United States and generally thrive without much effort on our part. I love all these berries and could eat gallons of them. Growing them myself was the only choice with today's grocery store prices.

Rubus species are generally easy to trellis to create tidy rows. Some close friends of mine have done the fence line of their small backyard in thornless blackberries. With little maintenance, they provide a bumper crop of berries each year, offer some privacy, and take up surprisingly little space. The same technique would work for raspberries or thimbleberries. You can also use posts and fencing wire to hold them in nice rows in the garden or raised beds.

I also love *Rubus* species because, like strawberries, they are highly economical. Once established, your plants will keep sending up new shoots. These shoots are easy to dig and to add to your planting or share with friends. If you don't need more plants, they aren't difficult to manage. You can mow over the shoots as they come up.

While *Rubus* brambles tend to be a bit too floppy and overenthusiastic for container gardens, they will tolerate a wide range of other conditions. They are one of the few fruits that will often produce reasonably well in partial shade.

Gooseberries and Currants

American growers often overlook these tasty, resilient fruits, which are popular in Europe. Though they are more productive in full sun, they are among the few fruits that still produce well in partial shade. They also offer heavy yields in an incredibly compact package.

These berries are also a must-have for northern growers. Most varieties are hardy to zone 3 or 4, but you'll even find a few that are hardy to zone 2. Plus, they tolerate some frost on their blooms. That said, they may not be the right choice for southern growers. These plants need cool, moist soil and good air circulation.

Certain currant and gooseberry cultivars also thrive in pots. However, they need consistently moist soil to thrive, so you must be committed to their upkeep.

Currants and gooseberries are also economical because they are easy to propagate. In the spring, twig cuttings pushed into loose soil often root, allowing you to create new plants that are great for adding to your garden or swapping with other homesteaders.

Grapes

Grapes may be the world's oldest domesticated fruit. New genetic studies have found that the first farmers began cultivating grapes to produce larger and juicier fruits roughly 11,000 years ago.[2] Grapes have always been so popular that growing them in urban areas is fairly common even today. Modern breeding has made it even easier by creating dwarf varieties that can easily be grown in containers.

When selecting grapes, it's critical to do your research on varieties. Some grapes are seedless, while others are not. Some grapes are excellent for fresh eating, some for raisins, and others for wine. Grape cultivars also vary

with region, so talking to a local nursery is a good idea.

No matter what grape you pick, you'll need to keep a couple of things in mind. First, grapes need full sun to be productive and to ripen fruit. Second, grapes need a trellis. Even the dwarf cultivars are quite heavy plants, so sturdy support is essential.

Figs

Figs have gorgeous leaves and tolerate pruning well, so they fit right into a nicely landscaped suburban area. One of my mother's neighbors actually has a beautiful hedge made of figs along her driveway!

Their virtues don't stop there. Figs are basically pest-free and are easy to propagate from cuttings. Fresh figs are also a true treat! I never find fresh figs in grocery stores near me, and even those available at specialty markets don't compare. When ripened on the tree, figs don't ship well. They spoil quickly unless dried. To combat this, growers harvest them when they're hard and green for shipping. If you have only had store-bought figs, you've never had a fig!

Unfortunately, growers in the far north will struggle with growing figs outdoors. Most fig varieties are only hardy to zones 7 through 9. If you live in the north, select a small fig variety suitable for container growing. Once the tree goes dormant in the fall and loses its leaves, you can move it into a garage or basement for the winter.

Dwarf and Espalier Fruit Trees

Today's industrious nursery specialists have developed a number of excellent dwarf cultivars that can make your orchard dream a reality, even in a suburban backyard. You can find dwarf peaches, plums, apples, pears, cherries, mulberries, and more.

Most dwarf trees reach just 8 to 10 feet tall and wide compared to standard trees, which may reach 12 to 25 feet tall and wide. Semi-dwarf trees are another excellent option, reaching about 12 to 15 feet tall and wide. You can also prune most fruit trees to meet your space requirements.

These dwarf and semi-dwarf trees have the added benefit of maturing and

producing much earlier than their standard counterparts. They're also much more accessible—no need to get a ladder to harvest from these trees. The one downside is that they don't tend to be quite as long-lived.

Many trees require a partner to produce well. If you have space for only one tree, find a self-pollinating variety.

To be even more creative with your space, you can train fruit trees with an espalier technique. This method of training and pruning allows you to grow a tree flat against a support like a wall or fence. It may also help in cold climates. In the Middle Ages, this technique was used on fruit on interior courtyard walls and helped prevent frost bud kill.[3]

Citrus trees are another great option, even if you live in the north. In our zone 7a cabin, we have a potted lemon tree that gets toted indoors every fall and out to the deck every spring. Surprisingly, it produces lemons! If you enjoy keeping houseplants, consider a dwarf citrus cultivar.

Site Selection

Depending on your space, you may need to make some decisions about where to place your fruit crops. The ideal location varies somewhat depending on what fruit you're growing, but there are a few things you want to notice when selecting a spot.

Many folks think they need an isolated spot for their fruit crops, but many play well with flowers, herbs, and vegetables. To maximize your space, consider opting for a cottage garden style and incorporating different plant types in one bed. Permaculture fruit tree guilds are a great example of this, helping you select companions for your fruit tree that will have benefits like encouraging pollinators, suppressing weeds, and deterring pests.

When selecting your site, sunlight should be a major consideration. You can usually improve soil or put up a windbreak, but the amount of sunlight an area gets is often something you can't change. You will not have success with fruit in full shade. For maximum production, full sun is ideal. However, as I mentioned earlier, there are a few fruits that will tolerate

partial shade and still produce. These include *Rubus* brambles like raspberries, blackberries, and thimbleberries, as well as gooseberries and currants.

You also want to think about air circulation and wind. Healthy fruit crops usually have adequate air circulation. Places with little air movement, like the inner corners of structures, can lead to more fungal disease issues in the summer and stagnant cold air or frost pockets in the winter. That said, too much wind isn't ideal either. Extreme wind can damage branches and burn foliage. In areas like this, you may need to provide your fruit with a section of fence or other structure to act as a windbreak.

Last, you should consider the drainage in your yard. While most fruit crops like moist soil, few enjoy "wet feet." Avoid planting trees in low-lying areas that are consistently wet. If this is your only option, consider trying mulberry trees; they tolerate wetter soils than most.

Container gardeners may have some advantage here. If you notice a spot isn't working well for your plant, try moving it! Just be aware that it may take a few weeks for you to start seeing changes as the plant adapts to its new location.

Rather than being too worried about the "site," container gardeners should carefully select containers. You don't need to buy anything fancy, but there are a couple of must-have features. First, all containers for fruit crops should have drainage holes. If you're upcycling old buckets or planters, you can make a few holes yourself if needed. This is especially critical for winter when water can build up and freeze around roots if improperly drained. Second, you need an appropriate-size container. Strawberries thrive in small planters, but for trees and bushes, you generally need to start with a five- or seven-gallon planter. As they mature and grow, you will probably need to repot them into a ten- or fifteen-gallon planter.

Soil, Preparation, and Planting

Generally, soil for fruit production should have a couple of critical characteristics. Ideally, it should be well-drained and rich in organic matter.

Thankfully, no matter what your soil looks like in the beginning, whether it's clay, sand, or loam, you can build good soil. The key is to add organic matter.

For smaller plants like annual crops, berries, and strawberries that you are planting in beds, add two to three inches of compost to the bed each season. For larger fruit trees and bushes, dig a hole at least twice the size of the root ball or pot. Mix the soil you add back around the roots with a good amount of finished compost.

Soil pH, or the measure of how acidic or alkaline soil is, is also an important consideration, though most fruit crops will tolerate a fairly wide pH range from 6.0 to 7.0. Blueberries are the most common exception to this. They prefer acidic soil with a pH between 4.5 and 6.0.

We determine pH with a simple soil test. You can pick up DIY soil test kits at most home improvement stores or order a soil test from your local extension agency. These tend to be more comprehensive but still very affordable.

Thankfully, pH is also fairly easy to correct. To lower the pH and make it more acidic, add sulfur. To raise the pH and make it more alkaline, add lime. These products will have application rates on the packaging. Add them to the surface or the top six inches of soil to avoid burning the plant's roots.

If you're growing a container orchard, good soil will look much different for you. Don't use the soil from your yard or standard garden soil. When placed in containers, this soil tends to compact and drain poorly, leading to issues like root rot. A mix of potting soil and compost is a great idea. This will be full of nutrients and well-draining.

Fruit Care

In general, most fruit crops are fairly low-maintenance, but they'll produce better if you give them some support. Watering is essential, particularly as plants get established in the first month after planting. You want the soil to remain moist but not saturated and soggy. Your plants in containers will

need to be watered much more frequently than those planted in the ground.

Removing weeds and plant growth from your fruit is also a good idea. Weeds can compete with your young plants for light, nutrients, and moisture. Growing other plants like herbs around fruit crops is acceptable; just space them appropriately. You may also want to grow cover crops like clover around fruit trees. Clover acts as a living mulch, adds nitrogen to the soil, and attracts pollinators.

I also like to mulch around all my plants, including fruit crops. Mulch helps prevent weed growth, holds moisture in the soil, and adds organic matter to the soil as it breaks down. You don't have to buy expensive mulch; you can use woodchips, straw, hay, or old leaves. Pine needles also work well for blueberries, though I don't use them around other fruits because they're acidic. Often, you can source woodchips from companies trimming around powerlines or old leaves from other folks raking their lawns. Just make sure you're not sourcing materials from places that have been treated with herbicides.

Some fruit crops, like larger fruit trees and *Rubus* brambles, often benefit from some pruning. Typically, experts recommend pruning in the late fall or early spring when the plants are dormant. Why and how to prune will depend on your species and goals. Some fruits, like raspberries, benefit from pruning to prevent them from becoming overcrowded. In other cases, we may need to remove dead, diseased, or damaged limbs from fruit trees. We may also use pruning to help train grape vines to their trellis or ensure fruit trees are productive and accessible.

A good nursery can usually provide basic pruning instructions, and plants you order online often come with this information. Knowing what you're doing before you give your plant a haircut is a good idea. You don't want to remove important fruiting branches and delay your harvest.

In addition to pruning, it's ideal to fertilize your fruit trees once or twice a year. How you fertilize will depend on the species of fruit and its age. With many fruit trees, like peaches, we often fertilize in spring. However, it can be helpful to fertilize annual crops, strawberries, and raspberries right before or during flowering to support fruit production.

I recommend using compost or chicken manure to fertilize plants that are in the garden, including trees. These provide a slow release of nutrients. Chemical fertilizers, including the organic ones, can lead to overfertilization. In fruit, this often causes an immense amount of foliage production and reduced fruit production. I like liquid options for container fruit. As with their garden counterparts, I find natural options like manure tea, compost tea, or liquid kelp to be effective fertilizers that reduce the risk of overfertilization.

Last, give your plants a little extra love before winter. Harvesting the seeds of annual fruits will allow you to grow more the following season. A heavy layer of mulch around perennials, including fruit trees, can help protect and insulate the roots during the winter. Tropical potted trees should be brought indoors, and figs grown in zones cooler than 7 will do best if moved to an unheated garage, shed, or basement to overwinter.

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[contents]

Breeding a Better Tomato

Kathy Martin

New England has tough growing conditions for tomatoes. There has long been a saying here that if you don't like the weather, wait a minute. Our climate has always been changeable, but now it is becoming even more so. It is also warming, which brings in more diseases that our tomatoes need to deal with.

There is something we can do about this. Tomato breeding is an age-old art. Local farmers can work to breed their own new varieties that survive and thrive despite climate change.

I am a farmer at Aurelia's Garden (www.aureliasgarden.org), a one-acre volunteer-run microfarm where we grow vegetables for donation to local food pantries. In addition to growing and donating forty-five different vegetable and herb crops, we also have a strong tomato breeding program.

Aurelia's Garden participates with a network of New England farmers who have joined the effort led by the Freed Seed Federation to develop new tomatoes that are delicious, can survive a changing climate and the new diseases this brings, and are open-pollinated so that all farmers can share the seed freely.

The mission of the Freed Seed Federation (www.freedseedfederation.org) in short is to fortify regional food resilience from the level of the seed, focusing on the Northeast United States, by adapting seeds to changing climate and keeping seeds in the public domain and free of private ownership. We are fortunate to have the Freed Seed's breeding director,

Hannah Traggis, as our farm manager at Aurelia's Garden. Hannah has given me many lessons about tomato breeding, and it is exciting to be part of the quest for better New England tomatoes.

This year Aurelia's Garden is growing about 500 tomato plants in our field. We have about fifty different varieties. All of these are seedlings that Hannah and I started ourselves last March and April in our homes. We sowed them, up-potted, and then, when the soil was warm, joined with many other volunteers who work at Aurelia's Garden to plant them out in the field.

As I look out across our tomato patch now, as we near the end of our season, we have some plants that are healthy and green and some that are spotty and brown with tomato diseases. It was a wet spring and a hot, humid summer—perfect conditions for tomato pathogens. It is said by breeders that a bad year for growing tomatoes is a good year for selecting new varieties that are disease resistant.

This year, we could select resistant plants, but we still had plenty of tomatoes. As of the end of September, Aurelia's Garden has grown and donated just under 2,000 pounds (a ton!) of fresh tomatoes to our local food pantries.

Why Breed New Tomatoes?

There are several answers to this. First, our climate is changing, new pathogens are being introduced, and tomato varieties need to adapt. The New England climate has long been unpredictable—hot and dry one season, rainy and cool the next. But the changes are now becoming more pronounced. Weather extremes stress tomato plants, making them more susceptible to disease. With the changing climate, we need to adapt our tomato varieties.

The diseases we have in the field as we finish up this year are the two that are common in New England: Septoria leaf spot and early blight. These two diseases spend the winter in our local soils, and we deal with them every year. They routinely cut New England tomato harvest times by a

month or more. Often, we need to fight late blight too, which is a devastating disease that fortunately doesn't survive our winters but makes its way gradually up the coast from the south each year. Sometimes it reaches New England. Breeding tomatoes with resistance to all three of these diseases is a challenge, but this would greatly improve New England tomatoes.

There are many diseases that affect tomatoes. More than a dozen viruses can infect them. Fungal diseases include leaf molds, Septoria leaf spot, gray leaf spot, and early blight. A fungus-like organism called an oomycete causes late blight. Parasitic roundworms can also damage tomato roots. Some of these diseases are prevalent in the South, some in wet areas, some in greenhouses. With our tomato breeding, we will look for plants resistant to the diseases in our field, Septoria leaf spot and early blight.

The second reason for breeding new tomatoes is that most tomato seeds available now are grown by a handful of large seed producers and are not well adapted to growing on small farms or home gardens in New England. They are not adapted to our climate, our diseases, or the eco-friendly growing methods farmers are now using. Small farmers worldwide used to breed and grow their own seed, but in the last fifty years, large private companies have dominated plant breeding. Now only four multinational companies control most of the global seed supply. Most of the tomato seed they produce is developed to be grown in large fields in prime growing locations and "must be grown with pesticides and fertilizers to produce strong yields."[4]

Large tomato seed producers have cut traditional varieties in favor of their modern varieties that often do not perform well in low-input, organic systems used by small New England farmers. Nor do they fare well in our highly variable climate. Small farmers and home growers want better varieties that produce well in their fields every year. Many are willing to take the gamble to participate in breeding programs to develop those new varieties.

I have read that there are more than 10,000 varieties of heirloom tomatoes in the world. These include wonderful old favorites like

‘Brandywine’, ‘Cherokee Purple’, and ‘Black Krim’. However, these were bred years ago to grow well in specific climates, very few have any disease resistance, and they are generally not highly productive.

The third reason for breeding new tomato varieties is that commercially bred seeds are nearly always hybrid varieties. That means that growers must purchase new seed every year because hybrid seed does not “breed true.” Saving tomato seed is straightforward if you are growing a non-hybrid, open-pollinated variety.

Open-pollinated means a plant breeds true when it has been pollinated naturally by wind, water, insects, birds, or humans. Breeding true means that offspring of the seeds collected all grow up with the same characteristics. The opposite is a hybrid variety that does not breed true in the next generation. Hybrids are crosses of two specific parent varieties, generally made by plant growers under highly controlled conditions. Often the parents are highly inbred and, if grown as they are, are very weak plants. When combined with another parent plant during the hybridization process, they produce offspring with incredible vigor.

Sustainable agriculturists say New England farmers can take things into their own hands to solve these three problems by reclaiming our heritage as tomato breeders. At Aurelia’s Garden, we are working with the Freed Seed Federation and a network of New England farmers to breed new tomato varieties that are adapted to our changing and variable New England climate, that grow well in small fields using eco-friendly methods, that are freely available to farmers to save and collect themselves, and, of course, that taste great!

How to Breed New Varieties

New varieties of tomatoes are bred by a process of growing and selecting the best plants year after year. The process generally starts with a hybrid plant, which is a cross between two tomato varieties. This hybrid can be specifically made by the breeder by carefully bagging and hand-pollinating flowers with specific parents. It can also be made by growing out field-

crossed tomatoes. Tomatoes do self-pollinate, but when they are grown close to other varieties, there is a fair amount of cross-pollination—anywhere from 4 to 60 percent, depending on the variety and types of bees around—that will create variation in the seeds.

The Freed Seed Federation's First Commercial Release

The first efforts at tomato breeding by the Freed Seed Federation began in 2020 and were directed at producing what Hannah describes as "a pink slicer, or something that looked like" the heirloom variety 'Cherokee Purple'.[5] They first focused on three interesting crosses they generated: a small pink cherry tomato, a dusky medium-size tomato on a small vine, and an orange saladette tomato. Patches of each of these three varieties were grown out at several participating farms across New England, including Aurelia's Garden, and their performance was evaluated.

Hannah is now focusing on the variety that is performing best in the trials. It is the dusky pink, which is a semi-dwarf plant with huge productivity. In fact, it outperforms plants five times its height in New England fields, Hannah says. This "will be the nonprofit's first release to the commercial market," and they project launching it in a few years.[6]

The goal of the Freed Seed Federation is not to profit from their seed breeding, but to develop an alternative breeding system that provides open-pollinated seed that farmers can use, save, and grow year to year.

The 'Sungold' Hybrid Variety

'Sungold' is a wildly popular bright tangerine-orange cherry tomato that has inspired many to use superlative descriptors: It has an "intense fruity and exceptionally sweet flavor that can't be beat." Its bite-size fruits "are crisp, tender, and juicy, with a popping consistency." Underneath the surface, the flesh is soft, aqueous, and orange, encasing a few edible seeds. The fruits have "an exceptionally sweet, fruity flavor mixed with savory, tropical undertones." Their "thin, taut, smooth, and glossy skin, ripening from green, gold, to dark orange when mature."[7] It is a vigorous plant that starts

yielding early and bears through the entire season. The ‘Sungold’ cherry is truly a marvel!

‘Sungold’ was bred by a large seed producer in Japan, Tokita Seed Company, and released in 1994. Tokita Seed continues to be the exclusive breeder and seed producer of ‘Sungold’. It is a hybrid tomato, referred to as ‘Sungold’ F1.[8] The seeds are distributed and can be bought worldwide through many retail sellers, including Burpee, Thompson and Morgan, Johnny’s Selected Seeds, and many other retail tomato seed sellers.

Tokita Seed patented ‘Sungold’ as a variety in the early 1990s when they originally developed it. This patent has by now expired, meaning that anyone is free to use Sungold seed for source material for breeding. However, no one else can produce ‘Sungold’ because it is a hybrid, and the parentage is a closely guarded secret by Tokita.

I have heard it rumored that ‘Sungold’ is already fully open-pollinated and that it is being produced by Tokita as such. But from other rumors I have heard, the opposite may be true, and ‘Sungold’ is produced by a complex parentage. Many home gardeners have good success in growing the tomato for an extra generation or two, but after that, lots of variety shows up, including red fruits, different-size tomatoes, and even potato-type leaves.

The Story of ‘Sunshine’, Bred from the Classic Cherry ‘Sungold’

I have always loved growing ‘Sungold’, and it has always been my earliest tomato. It makes so many fruits that I only ever need one plant in my garden. Last year I was surprised to find a tomato plant growing in my yard near where I had grown tomatoes the previous year. “Volunteer” tomato plants show up all the time! But this one I let grow. It was super vigorous and produced lovely golden cherry tomatoes just like ‘Sungold’. I decided to grow out this plant and see what its offspring looked like. I wanted to experiment and learn about tomato breeding. The first plant, the

“volunteer,” is called the F1, or first generation. It could have been either ‘Sungold’ × ‘Sungold’ parents, or it could have been a cross between ‘Sungold’ and any of the other tomatoes I was growing nearby.

Seven thousand years ago, native South Americans first bred cherry tomatoes from wild plants with blueberry-size fruits.

I collected seeds from several of the F1 fruits. Collecting seeds is a pretty simple process of squeezing the seeds out of a fully ripe tomato into a jar or cup. I like to ferment them by covering the seeds with water in a jar, covering with a paper towel and rubber band, and letting it sit for three days. Fermentation removes germination inhibitors, cleans the seeds, and may treat some seed-borne diseases. After three days, I pour off the upper liquid, collect the seeds on a paper towel, let them dry, and then store the seeds in a paper envelope.

This year we grew eighteen F2 plants at Aurelia’s Garden, and I grew one at home. For comparison, we also grew a dozen or so ‘Sungold’ at the farm, and I grew one at home. I became so enamored with the breeding that I gave the variety a name already. I call it ‘Sunshine’, though there is another variety already named that on the market. But since this may or may not be a variety we share or much less market, it is nice to have a name, even if temporary, to call it.

My goal with this tomato is to develop an open-pollinated variety that is similar to the wonderful and highly prolific ‘Sungold’.

‘California Gold’ and ‘Pink Cherry’

These are two other cherry tomatoes we are growing in trial patches at Aurelia’s Garden. ‘California Gold’ was developed from ‘Sungold’ through selection over several years at a small farm in California with the same

objective as us—to develop an open-pollinated sweet orange cherry as good as ‘Sungold’. ‘Pink Cherry’ is a beautiful pink color, slightly larger and flatter than ‘Sungold’. It is being bred by the Freed Seed Federation and is one of Hannah’s favorite selections.

Taste-Testing Tomatoes

Our taste-testing goal was to compare five varieties: our ‘Sunshine’, ‘California Gold’, ‘Pink Cherry’, ‘Sungold’, and another variety that the Freed Seed Federation was working on, ‘Red Cherry’. We wanted to evaluate their taste after growing at Aurelia’s Garden this year.

For our evaluation, we had a group of about ten field volunteers who assessed five cherry tomato varieties. We evaluated each variety for sweetness, off-flavors, tomatoey-flavor, saltiness, and mouthfeel. “Tomatoey-flavor” was defined as how much it tasted like canned tomato sauce. Mouthfeel included things like skin thickness and the mushiness or firmness of the interior. We rated using a scale of 1 to 5, where 5 was the strongest. Importantly, we also noted our general impressions of how all these characteristics fit together in creating a balanced taste experience. Here’s how we rated them:

Variety	Sweetness	Off-Flavors	Tomatoey Flavor	Saltiness[9]	Mouthfeel
‘Red Cherry’	3	3	4	3	1
‘California Gold’	4	5	4	3	4
‘Sunshine’	4	5	3	3	5
‘Sungold’	5	5	4	3	2

While ‘Pink Cherry’ was included in the taste-test, we didn’t have enough fully ripe fruits for all of us to taste and rate. They were highly variable depending on their exact stage of ripeness but very delicious when fully ripe. Those who did get to taste a fully ripe one, as I did a few days earlier fresh off the vine, found that it was a delicious experience: very tomatoey, soft in the mouth, and balanced in flavor.

For our tasting, there was a hands-down winner, and it was ‘Sunshine’! It

was mostly on mouthfeel that ‘Sunshine’ beat ‘Sungold’. The skin was softer and did not linger in your mouth to be chewed on, and the flavor was a bit more balanced, with less sweetness and more tartness.

Rating tomatoes is complicated. If we had a good amount of fully ripe ‘Pink Cherry’ for everyone to taste, it could have also been a winner—though it’s a very different tomato from the ‘Sungold’ types. The Freed Seed Federation will continue evaluating ‘Pink Cherry’. We will continue growing ‘Sunshine’ at Aurelia’s Garden. That one seems like a winner to us.

‘Red Cherry’ was not very good. But ‘California Gold’ was interesting in that it did not perform better in our taste tests. It grows beautifully and is super delicious when grown in fields in California where it is being bred. We think this is due to growing conditions in our field and differences between our local New England climate and the California location, which emphasizes the benefits of breeding new tomatoes that do well in specific local climates.

The Next Step in Growing ‘Sunshine’

Now that we have decided we want to continue to develop ‘Sunshine’, we need to collect and save seed. We will save seed from only one of the eighteen plants we currently have. These plants are the F2 generation, since they were the second generation derived from ‘Sungold’. (‘Sungold’, which itself is a hybrid, so it is designated ‘Sungold’ F1, was the parent. The volunteer in my yard last year was not a ‘Sungold’; rather it was the first generation of a new variety that I am calling ‘Sunshine’. The eighteen plants we grew out in the field this year are all ‘Sunshine’ F2.) All the ‘Sunshine’ F2 plants had the same delicious-tasting fruit, so we looked at the plants at the end of summer to compare their size and health. There was one plant that was the biggest and healthiest of the bunch. This will be the parent for our next, F3, generation of ‘Sunshine’ tomatoes.

It’s a straightforward process to collect and save seeds from tomatoes. I have collected and saved seed from the heirloom ‘Amish Paste’ in my home garden for years. I started with seed given to me by a family friend who had

grown and collected it for at least thirty years in their backyard. One of the good, or sometimes not so good, things about saving tomato seed is that, although tomatoes self-pollinate, they will cross with other plants grown nearby. The amount of crossing depends on the variety and pollinators present but can be up to 60 percent. So if a gardener is collecting and growing their own seed, they will generally see drift of their plants' characteristics to those of other varieties grown in their garden. This is not so good if the gardener wants to maintain a variety exactly as it originally was.

To collect seed from our 'Sunshine' F2 plant, we wanted to go one step beyond just collecting its seed. We will collect seed from fruits that have not cross-pollinated with other tomatoes in our field. To do this, we will use a process called bagging and tagging. We will find flowers that have not yet opened and cover them with a bag to prevent insects from cross-pollinating them. When the fruits begin to enlarge and ripen, we will remove the bags, tag the fruits, then collect and save their seed to plant next season.

Next year, we plan to prevent cross-pollination of the 'Sunshine' F3 plants by growing them at the far end of our field, at least fifty feet away from other tomato varieties. There's a lot of conflicting information about how readily tomatoes cross-pollinate across distances, with estimates ranging from ten feet to a quarter mile. In general, fifty feet is considered a good isolation distance away for tomato plants. Home gardeners can often get quite good separation at twenty to twenty-five feet.

Our goal will be to continue this process of growing up and selecting 'Sunshine' cherry for a number of years. We will evaluate the genetic diversity each year and collect and save seed from the most vigorous and disease-free plants with the best-testing fruits. Often tomatoes are selected in this manner for seven years. Seven is considered a magic number in tomato breeding—if a tomato breeds true for seven years, it is a good open-pollinated variety that will continue to breed true.

One thing to note is that we are only at the F2 generation in breeding our 'Sunshine', which is pretty early in the process to develop a variety that will be open-pollinated, taste similar to 'Sungold', and perform well in New

England. F3 and F4 generations are known to produce high variability for tomato breeders as recessive genes segregate. We expect that we will need to sort through many variants in the coming years. Hopefully, we will find one that maintains the delicious taste and vigorous growth of this year's plants.

Other Efforts to Breed an Open-Pollinated 'Sungold'-Like Cherry

Other gardeners and breeders around the world have worked to develop an open-pollinated cherry tomato similar to 'Sungold'. On garden chat boards, there are discussions of people saving, collecting, and growing 'Sungold' for years. Some report that the variety is consistent year after year, performing like an open-pollinated variety. Most report a large variability in the offspring.

Major efforts in breeding open-pollinated Sungold were reported by Reinhard Kraft in Germany. He has developed two varieties, 'Sungold Select' and 'Sungold Select II'. Both are now offered commercially. 'Sungold Select' is available through many seed sellers and is worth trying. The flavor is described as fruity yet tart, and the appearance is just like the parent. He has more recently developed more varieties called 'Big Sungold', 'Big Sungold Select', and 'Gobstopper'. All of these are definitely worth trying for performance in our New England climate, and we plan to trial these at Aurelia's Garden.

'Sungold Select' seeds developed by Kraft are currently sold by Reimer Seeds and Totally Tomatoes. They are described as open-pollinated: "This early maturing plant produces heavy yields of ¾ to 1 oz orange cherry tomatoes. . . . Very sweet, juicy, and flavorful. Perfect for salads, garnishes, or culinary creations. This is the dehybridized version of the Sungold Tomato."[10] I look forward to trying it, but "dehybridized" is a terrible word to use from a botany sense! It is simply a newly developed variety using 'Sungold' as a parent.

Growers speculating on the heritage of ‘Sungold’ generally think it looks like it is made by a complex cross. It has been suggested that Tokita Seed crossed an elongated tomato with a small round cherry. Most say it is likely impossible to create the mythical and evasive “open-pollinated ‘Sungold’.” Maybe it is a cross of three or four different plants, one being a red or pink variety. Maybe someone grew ‘Yellow Pear’ too close to ‘Large Red Cherry’ and ‘Sungold’ F1 was born. *Horticulture Magazine* shares, “The parent plants for this hybrid are a proprietary and closely guarded secret—but there is some speculation that one of the parents of ‘Sungold’ is the famous Brandywine heirloom tomato variety . . . one of the best beefsteak tomatoes.”[11]

New ‘Sungold’-Like Varieties Developed by Tokita

Tokita Seeds of Japan developed new varieties in its ‘Sungold’ line that were released in 2010. ‘Sunorange’ was developed as an improved ‘Sungold’ and is available at Osborne Quality Seeds and Tomato Growers Supply. It is a high-yielding cherry tomato that is more crack resistant and larger in size than ‘Sungold’. Cracking has always been a flaw of ‘Sungold’. Other Tokita Seed varieties include ‘Sunpeach’, ‘Suncitron’, ‘Sungreen’, ‘Sunlemon’, and ‘Sunchocola’.[12] You can guess the colors of these by their names. ‘Sunpeach’ is a pink cherry sold by Johnny’s Selected Seed that is crack resistant, highly productive, and is said to have incredible flavor.

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[contents]

The Art and Practice of Wild-Tending

Mandana Boushee

My family, like many Iranians, left Iran after the revolution of 1979, first traveling to Greece, then England, and finally settling in the Hudson Valley of New York. Upon arrival in New York, my mother was distraught that so many of Iran's celebrated ingredients could not be found at US markets and grocery stores. Commonly eaten dishes were now impossible to make, as so many herbs, fruits, and vegetables are endemic to Iran.

In Iran, wildcrafting is a very common pastime and tradition. Even in the busy capital of Tehran, thousands will head out of the city in the summer to picnic and enjoy the start of the black mulberry (*Morus nigra*) harvest. My mother spent her childhood frolicking in her mother's gardens, fishing in the stream with her father, and foraging from the wild with her family.

As my mother tackled settling into her newly foreign life, still living within the heartbreak of diaspora, she slowly started to find and recover parts of herself and her cultural story. On walks in her newfound landscape, she began to recognize familiar plants growing in New York. Though they were slightly different from the species growing back home, she found comfort in the family resemblance. Soon, plants like barberry, sumac, mulberry, mimosa, and sour cherry were finding their way back into the kitchen of our souls.

My mother had an irresistible urge to harvest fruits that went unpicked

and would often charm our neighbors into letting us harvest fruit and vegetables from their gardens that would otherwise go to waste. I can't recall the first time I went foraging with my mother, but I do remember the first time I realized that wildcrafting wasn't something the average American did at that time. I was about seven years old when my mother and I were collecting sour cherries from a neighbor's tree, when a passerby stopped to ask what we were doing. My mother cheerfully explained we were harvesting the fruit. Shocked, he shook his head, remarking we could be poisoned, as he walked away. At the time, I remember feeling a deep sense of embarrassment and shame, knowing even as a young girl that our way of life was very different from a lot of our neighbors.

Sometime after this encounter, I stopped going on foraging walks with my mother and began to hide from my rituals and cultural customs. Luckily, over time, a rose in bloom can remind us of the spectacular miracle that is the living world around us. It didn't take long for me to be reignited by the macrocosm of plants.

Reconsidering Wildcrafting

By eighteen, I was backpacking around the US and the world, self-studying plants and herbalism, and learning to subsist more than ever on a wild food diet. I felt pride to be practicing my traditions as my relatives did before me, while also carrying a new sense of agency in having access to self-reliant strategies and food economies.

When I finally settled back in the Hudson Valley in my late twenties, it seemed as if Western culture was waking from a long slumber. People were questioning, challenging, and examining our relationships to land, food, and health. Soon restaurants began introducing wild foods onto menus, successfully igniting a desire and excitement around trying new flavors and ingredients. That growing excitement also manifested in the health and medicine industries and eventually into the beauty economy. Medicines like bitters, chaga, and elderberry were becoming common in mainstream culture.

It was during this time that I began to see changes in the woods and lands I'd known and loved since childhood. The first sign of disrespect and misharvest I discovered was with the ramps (*Allium tricoccum*) that grew in one of my most beloved hollows.

In this undisturbed forest, many native plants grew in abundance: Spring beauties, toothwort, and red trillium carpeted the spring forest floor, but none more than the ramps. Upon a steep ridge lay acres of tightly packed ramps. In my years walking the land, I learned from the elders who still foraged in these forests that they waited until the late spring to harvest the ramps, when the bulbs were their tastiest and juiciest.

Each late spring, I'd climb the ridge in search of clumps of tightly packed ramps. Loosening the soil, I'd harvest the middle-size bulb from clusters of three, making sure to leave the fleshy white root behind. Before covering the remaining bulbs back in the dirt, I'd give each bulb a little more room to grow before packing the dirt in around them. Though it was time-consuming, I gave thanks to each plant I disturbed and harvested, and by the end of the day, I'd leave with a beautiful bundle of ramps and a deep sense of gratitude.

I was troubled one spring when, along the trail to the ridge, I stumbled upon a ramp unearthed with its roots still intact on the trail floor. As I looked ahead, I noticed a trail of pulled-up ramps leading to the ridge. Slowly, I began to realize that someone must have harvested the ramps and carelessly didn't bother to pick up the fallen ramps on their way out of the forest. Once I'd made my way to the ridge, I was shocked to find the state the land and plants were left in. Whoever had harvested the ramps hadn't even bothered to climb the ridge, taking the closest and first ramps that grew, leaving not a single one behind. I felt grief sick and sat on the ridge awhile, feeling through so many emotions. I didn't harvest any ramps that day.

When I got back home, I was overwhelmed with a sense of loss. A practice that I loved, that I felt culturally attached to, and that was connected to my sustenance suddenly felt changed. Though I practiced ethical wildcrafting, I knew I couldn't continue harvesting ramps from that

hollow anymore.

At that time, I'd often take time when walking in the woods to pick up trash or pull up garlic mustard plants that were finding their way into native plant habitats. When I'd hear word of land being deforested, a group of friends and I would rescue whatever plants we could, before the dirt was covered with blacktop. These acts felt important to me, as a way to reciprocate the gifts I received from the plants, but that day with the ramps brought important truths and lessons to light.

The Art and Practice of Wild-Tending

Though I felt connected to nature and in good relationship with it, I, too, assumed that I had an unspoken permission to harvest. I realized that day it didn't matter if I thought I was harvesting ethically and with integrity. Questions that kept coming up for me included: Was my relationship to plants consensual and generous? Was I responsibly engaging in my role in our relationship? Were there other ways I could connect with wild plants? The more I listened and questioned, the more I learned that there were a multitude of ways to engage with plants in the wild.

I call this practice and relationship in my own life wild-tending. I've re-centered practices that feel regenerative and give me more opportunities to build language and friendship with plants, like crafting flower, plant, and environmental essences or simply sitting with plants and spending time. I tend plants in the wild, supporting their many different forms of plant reproduction and their overall health.

In return, I receive the gift of joy felt throwing wish-filled milkweed seeds to the wind to disperse. I have become a better scavenger, taking what the wind and rain leave behind. I am grateful for the resilient, abundant, adaptive plants that some call invasive. I feed the soil nourishing teas, whispering prayers to all their mysterious moving parts. I am astounded by all the ways the land gives, and I let them rest, not expecting the loam to always be productive or of use. I am fed in a new way; the harvest now takes many forms and is full of lessons.

As herbalists, land stewards, and plant admirers, more than ever we are being asked to question our relationship to the land and natural resources, as the land is asking us to reciprocate our care and dedication. As we reflect wild-tending into our practices, herb schools, businesses, and apothecaries, we are discovering the tiny tears that were hiding there all along. We are being called to do more, to activate, to speak up and advocate for our more-than-human relatives. Injustice, greed, and disrespect for the land has brought us onto the shores of our new shared reality. We are facing an angry earth and the long grief that comes with the loss of endangered and at-risk plant species.

It is time for us to remember the bird call, the fruit that brings us to tickle the trees, the feel of moving water on our hands. We have the opportunity to unconditionally bring the reishi mushroom and hemlock tree a feast of food for their saprobic relationship, the river's water a shiny stone for their life-giving qualities, and the mountains a song to echo for their strength and stability. May we find ways to tend this wild seed in which we live into a bouquet of beautiful creation.

Guidelines for Ethical Wild-Tending

Respect the Land

- Harvest only what you need and will use.
- Do not waste what you have harvested.
- As a general rule of thumb, don't harvest more than a third of what is there and let lie some of the strongest-looking plants to keep the stand thriving.
- Be mindful of your energetic state while harvesting.
- Practice harvesting with humility and gratitude.

Learn and Offer Care

- Learn how plants reproduce and how to support the process. Spread

their spores and seeds, replant root divisions, and so on.

- Learn the endangered, rare, and at-risk plants of your area. Don’t harvest these plants, and educate and advocate on the harm of harvesting these plants. Consider growing these plants in a sanctuary garden.
- Learn the invasive plants of your area. These plants are abundant and useful and can be harvested in larger quantities.
- Feed the soil and plants nourishing teas to support their health and well-being.

Tend Without Expectation

- Leave the land more beautiful than when you came. Pack out what you pack in and more. If the area you are harvesting from is filled with trash, gather some of the trash as well.
- Be a steward and advocate for the land and our more-than-human relatives. Educate folks about endangered and at-risk species. Don’t be afraid to speak up at a potluck or farmers market where wildcrafted at-risk plants or mushrooms like ramps or chaga are being sold or utilized.
- If you know of a green area that is going to be developed, gather a team of people together to harvest and transplant as many of the plants as possible to an area that is protected or considered a plant sanctuary.
- Be astounded by all the ways the land gives, and let it rest, not expecting it to always be productive or of use.

[contents]

Landscaping with Herbs in the Flower Garden

James Kambos

My garden slopes down and away from my house. As I sit on my patio on this sunny June afternoon, a crow caws overhead, then lands on the old weathered fence. The breeze ruffles the foliage of my daylilies. The oregano stems sway, and the yellow coneflowers reach for the sun. Soon they'll stand about seven feet tall and be crowned with brilliant yellow flowers. And in the vegetable patch the cucumbers are just beginning to show.

It's a beautiful sight. I love how my herbs and flowers mingle. They overlap. Their foliage, flowers, and scents play off each other. There is no star performer in my garden—they are all happy costars. Each adds its own look and brings its own unique talent. There is no dominant theme.

In the late afternoon the sunlight shifts. The leaves on the trees and the foliage of the herbs and flowers appear to shimmer in the June sunlight. They seem polished, the way that only a sunny June afternoon can make them appear.

Before I turn to go inside, I take it all in again. The memory returns. It was on a June afternoon similar to this many years ago that my garden began to take shape in my mind, and with my two hands.

An Idea Takes Root

During that June so long ago, I had an L-shaped plot in my backyard plowed and tilled until it was level. This was to become the main section of my garden. The soil rose in rich brown waves as it was plowed, the earth releasing its loamy fragrance.

I quickly began to plant the perennial plants I had ordered from a catalog. They were only roots but took off quickly. I gave little thought at the time to herbs. I left a small amount of space for a couple of tomato plants and a basil plant, but that was it. Until the perennials spread out, I filled in the space that was left with an assortment of annuals during the first couple of seasons. Eventually, gardening friends came around to check out my progress. They would usually bring me a start of some perennial from their garden. I still have these “gifts” growing, thriving in my garden. I cherish them—it’s as if my friends are still with me.

Then the day came that I met a gardener and an herbalist. Everything was about to change. This herbalist would become a great friend. She was about to plant the seed of change in me. New ideas about how I viewed gardening were about to take root.

She began by giving me small starts to many herbs—oregano, chive, lamb’s ear, and monarda, to name only a few. She explained how growing herbs was a form of therapy for her. The flowers, the scents, the foliage, and just the overall beauty captured her imagination. It soon became clear that the small space I had planned to leave for a few vegetables and a couple of herb plants would not be room enough to contain my growing passion for herbs.

A new idea had taken root. Instead of focusing on flowers only, I began to integrate herbs into my floral landscape. Although my garden no longer fit into one particular category, I was now able to embrace the two things I was most passionate about: flowers and herbs.

Reasons to Mix Flowers and Herbs

There are many reasons why gardeners desire to combine herbs and flowers

in their garden landscape. Let's take a look at some of these reasons and how that can lead to some very appealing results.

Space Limitations

This is what eventually led me to change my garden concept. Don't let small spaces limit you from utilizing herbs in your garden. Just a few herbs can have a large impact. For several years I made an edging at one end of my flower border using lemon thyme, and all it took was three plants grouped together. They formed a blanket of white flowers, and their fragrance was heavenly. They also created a lovely transition from the border's edge to the taller perennial flowers in the middle of the border. Other herbs that are great to use in tight spaces are chives, basil, lavender, and rosemary.

Time Constraints

This is a good reason why many folks finally decide to combine their herb and flower gardens. Herb gardens by themselves can take a great deal of time. Planting, weeding, watering, and other maintenance can become a full-time job. Adding herbs to the flower garden can lessen your workload. With herbs and flowers together, you can do your tasks once, and you're done.

Companion Planting

Herbs make great companion plants for the flower and vegetable garden. When we speak of companion planting, we are talking about plants that, when planted among other plants, offer benefits such as protecting the garden from harmful insects or attracting pollinators such as bees, butterflies, and hummingbirds. The list of herbal companion plants is too long to list here (see page 252). But just adding a few, such as basil, oregano, wood betony, sage, and thyme, would help protect your flower garden, attract pollinators, and bring charm to the garden.

Culinary Benefits

One of the greatest benefits of mingling herbs into the flower garden is that

you'll have a constant supply of various fresh flavors to add to your recipes. And as a bonus, in many cases your herbs will only be steps away from your kitchen if you plan accordingly. I was raised in a family where the herbs were always grown among the flowers. So at mealtime any fresh herbs we needed were within easy reach of the kitchen door. I have kept this tradition alive: I can walk outside and, about four steps away from my oven, pinch off some parsley, basil, or thyme.

Along with the culinary benefits, tucking a few flavorful herbs among your floral beds and borders will also help protect your garden from pests. At the same time, your herbs will serve as hosts to beneficial insects and pollinators. Here are a few culinary herbs and their benefits:

Basil: This tasty herb is a mainstay of Mediterranean cooking. It also repels flies, whiteflies, and tomato hornworm.

Chives: This mild member of the onion family not only offers pale lavender flower heads, but it also gets rid of aphids.

Dill: Besides its tall stems of flavorful feathery foliage, dill can also deter spider mites.

Oregano: This is another great addition to Mediterranean cuisine; however, the flowers held above two-foot stems are also a great magnet for honeybees.

Parsley: Not only does parsley grace the flower border with its elegant foliage and add a fresh flavor to recipes, but it also draws the beneficial ladybug beetle to the flower garden.

Sage: It isn't just for dressing. The silvery foliage of sage and its flowers attract honeybees and butterflies to your garden. It also repels harmful beetles and cabbageworms.

Thyme: English thyme and lemon thyme are known for their fragrant foliage, which enhances many recipes, but in the flower garden they are a true help. In late May through early summer, they're covered in small white flowers. These flowers, though small, attract large numbers of honeybees. Thyme is one of the greatest pollinator-friendly herbs for the flower garden.

There are many other culinary herbs that will also help you protect your garden from pests and at the same time add flavor to your recipes. The ones I've discussed here are the ones I know best.

These are only some of the reasons gardeners are drawn to the idea of integrating herbs within their flower garden. You must do what works for you best.

A Few More Herbs for Your Consideration

As you begin adding herbs to your floral landscapes, you will find an overwhelming number of choices. Over the years, I've had the chance to experiment. I've had various outcomes. The herbs I've already mentioned are ones I've found very satisfactory. In fact, I would consider them to be the foundation of any herb collection.

Sometimes I've found a selection I've made doesn't perform well in my garden—perhaps it was fussy about soil, or maybe my garden didn't receive enough sun. There have also been occasions when an herb I selected became so invasive that I removed it and threw it into the trash! Please understand that any herb I recommend has proven to be a well-behaved garden performer for me.

Then there are times I've found an herb to be an exceptional garden addition. They're easy to grow, not fussy, lovely, and come back year after year.

Here are some of my favorites. I hope you give them a try. They will lend old-time grace and charm to any floral-herb garden combination you can think of.

Betony

Also known as wood betony, this was at one time an all-around medicinal herb found in the pantry of every herbalist's home, thought to aid in healing everything from coughs to kidney stones. In folk magic, its leaves were dried and crumbled at every doorstep to guard against the evil eye.

Herbalists of long ago would place a betony leaf beneath their pillow to ensure a pleasant prophetic dream.

Today betony is making a comeback as an attractive hardy herb. It's now found growing in herb and flower gardens. It forms an attractive clump about 2 feet wide. Its leaves are dark green, crinkled, and oblong. They attain a length of about 5 inches. It sends up flowering stems 18 to 24 inches tall, topped with pinkish-purple flowers, adored by bees. It's related to the mints but is not invasive. Plant betony in full to part sun in regular soil, and you'll be rewarded with years of carefree beauty. Nestle it among wildflowers for a beautiful combination. It grows best in zones 4 through 7.

Lavender

If you want to incorporate an herb into your flower garden that offers floral beauty, attractive foliage, and intense fragrance, then you must include lavender. There are several cultivars of garden lavender, but I'll focus on the handiest and easiest to grow, English lavender. It's hardy in garden zones 5 through 10. Like all lavender, it's a small woody shrub. A mature English lavender will spread to about 3 feet wide. Its 18-to-24-inch woody stems are covered in narrow silver-green foliage. The stems are topped with narrow lavender flowers. Both foliage and flowers are very fragrant.

The benefits of growing lavender are many. Besides its heavenly fragrance, it attracts bees and butterflies, making it a magnet for pollinators. Even though we find the lavender fragrance pleasant, it seems to repel small rodents such as mice, which adds a protective barrier to your garden and home. And don't forget that lavender dries beautifully. Add it to dried herbal arrangements or wreaths, and crumble a bit of dried lavender stems or flowers into sachets to freshen closets and drawers.

When landscaping with lavender, plant it in full sun in regular to rich garden soil. Position it near the front of the garden or along a path so you can pick up its fragrance as you walk by.

Wherever you plant it, lavender will be a stunning addition to the mixed herb and flower garden.

Sweet Cicely

Elegant, delicate, and carefree, sweet cicely is the last herb for the flower garden I'll highlight. This beauty can attain a mature height of 2 to 3 feet, and a width of about 2 feet. It grows in hardiness zones 3 through 7. The plant is covered in dark green delicate fern-like foliage. In late May and early June, the herb is covered in flat white flower heads that are nectar rich and beloved by pollinators. When you pinch off the foliage and roll it between your fingers, it imparts a licorice scent. The chopped foliage makes a flavorful accent to salads, especially fruit salads.

Unlike most herbs, sweet cicely is not a sun worshiper. In fact, full sun can kill it. Plant sweet cicely in full shade to part shade. It looks very beautiful tucked among ferns and astilbe. It might be the perfect accent plant you've been looking for if you have a woodland shady flower garden. Sweet cicely will thrive in compost-rich garden soil. I like to add a little composted material in the early spring. Once established, sweet cicely will thrive for years with only minimal care.

Some reports indicate that sweet cicely is invasive. I must say it isn't. My original plant has eventually formed a beautiful contained clump about three to four feet around, and I've had it about twenty years.

If you have a shady spot, I highly recommend sweet cicely.

There is no wrong or right way to blend the beauty of an herb garden and a flower garden together. You probably have great ideas of your own. What you do will depend on your tastes, location, and garden size.

If it feels right, do it.

[contents]

Oh Deer! Critter-Resistant Herbs

Elizabeth Barrette

Everyone loves herbs, including all kinds of critters, from insects to deer, that like to eat them. Fortunately, some plants are more palatable than others. You can reduce competition for your herbs by instead planting those that herbivores find less appealing to eat. Let's take a look at some of the challenges and solutions.

Herbivorous Pests

In order to dissuade critters from eating your herbs, you need to know your enemies. Learn about herbivorous creatures, their habits, and their strengths and weaknesses.

Insects and other invertebrates chew holes in leaves or fruit. Larger ones devour whole plants. However, some beneficial insects, like butterflies, need to eat particular plants. Swallowtail caterpillars feast on parsley and dill, so set aside a few plants for beneficial insects. Various products can control insect pests, but you can also block them with netting or floating row covers.

Mice, voles, and other tiny vermin appear almost everywhere and eat a wide variety of things, especially seeds. They can gnaw through almost anything but metal or glass. Many control methods are available.

Rabbits, hares, and other medium-size ground dwellers are also ubiquitous. They are often picky eaters. They can be kept out by hip-high wire fencing, but bury it a foot underground because they can dig.

Squirrels, raccoons, and other medium-size climbers are all but impossible to deter with anything less than a full wire enclosure. Rely on plants they can't or won't eat.

Deer, elk, and other large herbivores are less common except in rural or wilderness areas. Browsers nibble on brush but also eat tender herbs and vegetables; like rabbits, they can be choosy. Their sensitive mouths and noses dislike harsh smells and sharp textures. It takes a fence at least nine feet high to keep them out, and a wire roof is better.

Plant Defenses

Plants and animals have fought an evolutionary arms race for millions of years. Plants are primary producers that generate energy directly from sun, soil, and water. Herbivores are primary consumers that eat plants. Since plants want to avoid getting eaten, they have evolved a formidable arsenal to discourage it. When hungry enough, critters nibble anything that isn't outright poisonous, but these are the last things they resort to eating. Interestingly, some of these defenses are exactly what makes many herbs appealing to humans.

Herbs with these features may be labeled "herbivore-resistant" in catalogs or garden centers; look for an icon of a deer or rabbit with a slash through it. If you memorize the traits, you can look for them in person or in research. Many are readily discernible, so you are not limited to the plants listed in this article. Especially look for species native to your locale.

Goo, Gum, or Resin: Sap carries water, nutrients, and waste products through plant tissues like blood does for animals. When injured, some plants leak sticky goo or resin, like evergreens. Amber from fossilized tree sap often contains insects inside. Other plants have milky, latex-like sap, such as dandelions and milkweeds. The opium poppy's sap makes strong painkillers. Soapworts have saponin-rich sap that foams when rubbed in water and tastes soapy. Many useful products come from plant saps, like latex, rubber, and resin incenses. If you have goo producers, you can also make your own tanglefoot traps for insect pests.

Hair or Fuzz: Leaves or fruit may be covered with fuzz that is soft and woolly, like peaches, horehound, or lamb's ear. Hairs tend to be stiffer, as on comfrey or borage. Some plants protect and disperse their seeds with fluff, like thistles and cotton. While many people enjoy petting fuzzy plants, hairy ones are best handled with gloves.

Irritants: Plants are expert chemists and produce many irritating chemicals. Some are oils or resins, as on poison ivy. Others are stinging hairs, like nettles have. Some are more subtle: Touching rue can make skin more vulnerable to sunburn. It may or may not be possible to disarm these defenses by cooking the plants. Many gardeners don't want to mess with these plants; if you do, use caution.

Natural Enemies: Some plants attract the natural enemies of their pests, often by providing food or shelter in exchange for protection. Ants are a favorite because they are aggressively territorial; they are found in peonies and acacia.

Repellents: Some plants make chemicals that drive away pests. Herbal repellents are very popular with people who dislike synthetic chemicals.

Strong Scent or Taste: Most herbs use this defense, though they may also have others. Smells and flavors that discourage most herbivores may attract humans. Think of things like anise, garlic, ginger, or mint.

Thorns, Spines, Bristles, or Awns: Many variations of plant parts are hard and sharp enough to stab any creature that bothers them. Few animals have developed mouths that can withstand these. Use gloves when handling sharp plants.

Tough Parts: Fibrous roots, woody stems, leathery or waxy leaves, hard seeds, thick-shelled nuts, and silicates are barrier methods that discourage herbivores. Pests typically must specialize to thwart these.

Toxins: Poisonous plants cannot be eaten safely but may not affect all species the same way. Insects often adapt to eat specific plants; for example, the monarch butterfly raises its larvae only on milkweeds, which few other critters can eat. Many dye herbs are toxic even in small amounts. Medicinal herbs are often toxic in large amounts, and even

some culinary ones like nutmeg are too. If you have pets or small children, you may want to avoid these, which is no hardship to a culinary gardener. For medicinal or dye plants, consider a fence.

Critter-Resistant Herbs

These are among the herbs that have the best defenses and appeal the least to herbivores. Many have more than one strategy to avoid getting eaten. When you plant them together, their effects overlap and create a zone with fewer pests. Herbs from the same habitat, like Mediterranean herbs, have similar requirements so they grow well together. Woodland plants like caneberries, sweet woodruff, and wild plum make another set.

You can design a critter-resistant garden for any spot. Pop a fence or row cover over it if necessary. Herbivores won't try as hard to reach unpalatable plants as delicious ones.

Artemisia (Artemisia) includes various bushy, silver-green herbs with woody stems and a sharp, musky scent. Many have fuzzy leaves. Popular herbs include mugwort (*A. vulgaris*), southernwood (*A. abrotanum*), and wormwood (*A. absinthium*). Artemisias make good strewing herbs because they repel pests and parasites. Deer, rabbits, and most other herbivores avoid them. The silvery color makes them popular for moon gardens.

Basil (Ocimum basilicum) is a small bushy herb with fine or broad leaves of glossy green. Its essential oils have a sweet, spicy scent. It repels asparagus beetles, carrot flies, flies, mosquitoes, whiteflies, and other insect pests.

Bee Balm (Monarda) is a bushy herb with frilly arching flowers. It has a medicinal, minty scent that leans citrusy in some cultivars. The smell discourages some pests; deer and rabbits won't eat it. Bee balm attracts bees, butterflies, other beneficial insects, and hummingbirds.

Caneberries (Rubus) grow on tall arching or straight canes armed with formidable thorns, prickles, or other arsenal. They include blackberries,

raspberries, and their relatives. The fruit is sweet and the leaves useful in herbal tea. Rabbits nest under caneberry thickets, but fierce thorns discourage deer and other large animals, making this a good choice for one layer of an edible fence alongside something taller like wild plum (see page 62).

Chives (Allium schoenoprasum) belong to the allium family and have hollow, grasslike leaves with pink puffball flowers. They have a pungent flavor akin to onions. Garlic chives (*A. tuberosum*) are similar, with flat leaves and a more garlicky taste; the white flowers attract predatory wasps that parasitize beetle larvae like Japanese beetles and june bugs. Chives also repel aphids, most mites, and Japanese beetles. They can reduce risks of apple scab. Rabbits, deer, and other mammals avoid eating them. Most alliums discourage insect pests and herbivores. Chives yield yellow-green dye.

Citronella grass (Cymbopogon nardus, C. winterianus) spans several plants with an overwhelming citrusy scent. It can repel a wide variety of insects and makes repellant candles and sprays.

Feverfew (Tanacetum parthenium) is a fluffy herb with tiny daisylike flowers. It has a citrusy scent that repels ants, bedbugs, cockroaches, flies, mites, mosquitoes, and moths, plus mice. Deer usually don’t eat it.

Garlic (Allium sativum) produces bulbs with many cloves. It defends itself with pungent oils. When we eat it, it discourages biting insects. It makes repellent sprays good for outdoor surfaces. Herbivores don’t eat it.

Hyssop (Hyssopus officinalis) is a mildly aromatic herb with fine, small leaves. It excels at repelling cabbage moths and flea beetles. Bees adore hyssop. Deer usually don’t eat it.

Lavender (Lavandula) is a tall gray-green herb with narrow leaves and famously purple flower spikes. It discourages bugs in general and especially mosquitoes, moths, and flies. Deer and rabbits won’t eat it either. It is among the most popular herbs for making soaps, sachets, and potpourri.

Lemon balm (Melissa officinalis) is a short bushy herb with glossy

scalloped leaves. It belongs to the mint family but has a piercing lemon scent. Among its active compounds is citronellal. This repels many insects, including mosquitoes and gnats.

Lemongrass (Cymbopogon citratus) is a tall, grassy herb with sharp, tough leaves and an intense lemon scent. The smell discourages many insects, and unlike some repellents, this one is edible and used as an aromatic in cooking. Deer and most other herbivores avoid the sharp, tough leaves, and they don't even like the smell.

Marigold (Tagetes) has finely divided leaves and flat or pompom flowers. It has a sharp, spicy odor that repels many insects, such as cabbage worms, mosquitoes, squash bugs, thrips, whiteflies, and other pests. However, it's a vital late-season flower for butterflies and other pollinators. Deer won't eat it. Marigold contains pyrethrum, a compound used to make many natural insect repellents. It kills root nematodes. It also makes fire-colored dyes. Note that breeders have created many ornamental cultivars with little or no smell; for herbal and pest control uses, choose the smelliest marigolds you can find.

Mint (Lamiaceae, Mentha) includes many dozens of different aromatic plants, most of which repel pests. Deer and rabbits usually don't eat most of them. Peppermint and spearmint are two popular types used against ants, aphids, cabbage moths, flea beetles, fleas, spider mites, and rodents. They are widely used to make soaps, sachets, and sprays.

Pennyroyal (Mentha pulegium) is a low-growing mint with round, blue-green leaves. Its intense medicinal odor repels ants, chiggers, fleas, flies, gnats, mosquitoes, and ticks. It is toxic and can also irritate skin, so it's best used in outdoor applications or just grown in the garden.

Peony (Paeonia lactiflora) is a big bushy herb with dark leaves and large fragrant flowers. It is used in traditional Chinese medicine and for perfume. Peonies are vigorously defended by swarms of ants, and because ants are so territorial, they do quite a good job of eating other insects or biting and stinging animals. Therefore, peonies make an excellent layer in a barrier fence, particularly combined with something taller like wild plum (see page 62).

Rosemary (Salvia rosmarinus) is a shrub with narrow, needle-like leaves and a sharp piney smell. It repels cabbage moths, carrot flies, and mosquitoes, making it an excellent garden plant. Deer, rabbits, and most other herbivores won't eat it.

Rue (Ruta graveolens) is a bushy blue-green herb with complex rounded leaflets. It repels aphids, flea beetles, flies, Japanese beetles, and onion maggots, plus slugs and snails. Deer won't eat it either. Its oils can cause skin irritation and greatly increase vulnerability to sunburn, so always handle it with gloves. Rue is a popular ingredient in pest powders, especially for outdoor use.

Sage (Salvia) is a woody gray-green herb with a musky, resinous scent. It repels beetles, cabbage loopers, cabbage maggots, cabbage moths, cabbage worms, carrot flies, carrot rust flies, and snails. Deer and rabbits won't eat it.

Sweet woodruff (Galium odoratum) is a groundcover with tiny whorled leaves and a sweet scent. It repels moths, making it popular for sachets and potpourri. Deer usually don't eat it. It grows well in many woodland gardens.

Tansy (Tanacetum vulgare) is a tall plant with finely divided, ferny leaves. It deters ants, cutworms, fleas, flies, Japanese beetles, mosquitoes, moths, squash bugs, striped cucumber beetles, ticks, and most flying insects, plus mice. However, it also attracts beneficial insects like bees, braconid wasps, and ladybugs. Tansy cannot be eaten safely by most herbivores, as it is toxic. Thus, it may be used as a defensive border around more tender plants.

Thyme (Thymus) includes a variety of a low-growing herbs with tiny leaves and a musky odor. Some are woody, and others are more tender and rambling. They discourage insects such as aphids, cabbage loopers, cabbage moths, cabbage worms, Colorado potato beetles, flea beetles, tomato hornworm moths, and whiteflies. Thyme attracts ladybugs and other beneficial insects. It is disliked by most herbivores, including deer and rabbits. It is popular for making repellent powders and sachets.

Wild plum is a tall bush or short tree with large thorns that can form dense

colonies. Species include American plum (*Prunus americana*) and Canada plum (*P. nigra*). Its small edible fruits may be sweet, sour, or bitter, and the bark has medicinal uses. While rabbits can fit through the thickets, deer and larger animals usually cannot. That makes wild plum a great layer of a living fence, especially with shorter plants like caneberries (see page 58) or peonies (page 60).

Yarrow (Achillea) is typically tall with frilly leaves and broad, flat heads of tiny flowers. The leaves are intensely aromatic, and some cavity-nesting birds use them to deter pests such as mites. Deer, rabbits, and other herbivores usually don't eat it.

Companion Plants

Companion planting involves mixing different species together so they can support each other. Permaculture does this in various ways. In guilds, each plant has a different role, such as attracting insects or fixing nitrogen. In polyculture beds, each plant has different needs, which can be addressed, for example, by mixing those with shallow and deep roots, such as chives and garlic. Forest gardens layer plants at different heights, as recommended for a living fence. Here we focus on the role of repellent plants that discourage pests.

Alliums: All of these (chives, garlic, garlic chives, leeks, onions, and scallions) grow well together and make an impressive polyculture. Plant them near brassicas, carrots, daylily, lavender, peony, sage, salvia, strawberries, and tomatoes. Chives grow well under apple trees and enhance the flavor of carrots. Do not plant alliums near beans or peas.

Basil: Plant it near asparagus, chamomile, cucumbers, onions, peppers, and tomatoes. It improves the flavor and growth of tomatoes. Do not plant basil near rue.

Hyssop: Plant it near all brassicas, nightshades, and melons. Hyssop stimulates grape growth; brussels sprouts stimulate hyssop. Do not plant it near radishes.

Lavender: Plant it near broccoli, brussels sprouts, cabbage, cauliflower, garlic, kale, kohlrabi, radishes, rutabaga, and turnips. It makes a great underplanting for fruit trees.

Lemon Balm: Plant it near all brassicas, kiwi, lavender, melons, onions, summer squash, thyme, tomatoes, and winter squash. It does well under apple and other fruit trees.

Lemongrass: Plant it near cucumbers, ginger, peppers, tomatillos, tomatoes, and turmeric. It also works well under fruit trees.

Living Fences: Make a tall living fence with wild plum, caneberries, and peonies. Make a low one with rosemary, sage, and thyme.

Marigold: Plant it with everything.

Mint: Plant it near basil, beans, broccoli, cabbage, carrots, cauliflower, eggplant, kale, lettuce, thyme, tomatoes, and peas. Many mints spread aggressively, so grow it in containers. Do not plant near chamomile or parsley.

Rosemary: Plant it near beans, broccoli, brussels sprouts, cabbage, carrots, cauliflower, kale, kohlrabi, parsnips, radishes, rutabaga, and turnips. It improves the flavor of sage.

Sage: Plant it near broccoli, brussels sprouts, cabbage, carrots, cauliflower, kale, kohlrabi, potatoes, rutabaga, radishes, rosemary, sweet potatoes, and turnips.

Thyme: Plant it near broccoli, brussels sprouts, cabbage, cauliflower, kale, kohlrabi, lemon balm, mint, radishes, roses, rutabaga, strawberries, tomatoes, and turnips. It improves the flavor of shallots.

Conclusion

Plants have been battling hungry critters since the dawn of time, and they are better at it than humans. Fortunately, you can borrow their skills by planting species that pests avoid. The more you combine, the more powerful their repelling effects get. So start planning an herb garden that you will love and pests will hate.

Selected Resources

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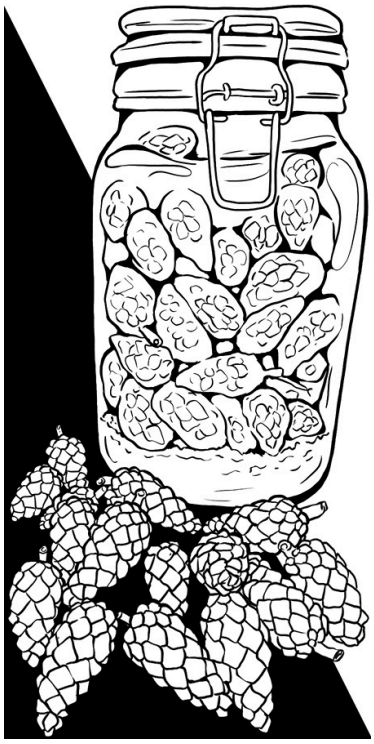
[contents]

The Community in Value-Added Production

Mason Olonade



When I got into agriculture, I looked forward to sharing with my community the glories, follies, and broad ins and outs of Traditional African Spirituality. As almost no one is interested in theology for theology's sake, I turned my attention to the activity that I was doing while listening to the universe convey our culture back to me: agriculture, or, as it is called in Yoruba, *Eko Nipa Iroko,* the art of cultivating the soil.

I learned, outside of Black History Month, as an adult about the true scale of expertise demonstrated by Dr. George Washington Carver, understanding that he was so much more than the Peanut Man. His popularization of peanut butter and the bulletins that he produced at Tuskegee that I had heard so much about as a child were the way—the path had been cleared for me. As I walked the path, I ear-tagged, weighed, experimented on, and dissected mice; updated spreadsheets; cultured fibroblasts; propagated clones of 'Afghan No. 1' and 'Cherry Pie'; and sprouted seeds from grocery store produce while listening to lectures and podcasts on agriculture and African Spirituality. My opportunity to link the two came from hearing lecturers on both subjects say "the healthiest soils are black."

As I continued into agriculture, I was curious: How are individual people actually making money with this? The answers varied considerably, from "They are not" to "They are hustling in every possible way" with courses, Patreons and YouTube channels, U-pick, agritourism, summer camps,

wedding venues, workshops, certifications, and selling to restaurants. One of the most unique financial endeavors I ever heard of was Larry's Smoke Dried Tomatoes. For the sake of brevity, Larry Butler built a smoker, cut off the scalded side of his storm-damaged tomatoes, and did so much business with this one product that he was able to hire someone to just run that operation.

I was especially excited to share that story, among others, during the talk that my buddy Mandela and I gave at Rooting DC 2020. I firmly believe every urban agriculturist is doing something unique and, if desired, can make and package that unique technique, perspective, cultivar, story, or flavor for the market.

Value-Added Ideation at Three Sisters Farm

Theorizing about what a farm could look like, what should be done, and how to do it is a wonderful exercise. Determining how much of that exercise builds functional muscle is, however, a very different task. Value-added production is the main idea that I have had for the urban agriculturist to make more money from their operation, but its potential for community impact only came through practice.

Once I began volunteering at a farm and seeing the challenges it faced, I began looking for accessible solutions. Our chief issue was that of funding: Not all income is sustainable. We were producing so many gorgeous collards (*Brassica oleracea* var. *acephala*), kale (*Brassica oleracea* var. *acephala*), and spinach (*Spinacia oleracea*) greens that first summer that I knew we could sell these to some restaurant. My wife and I found a progressive vegan restaurant that would be the perfect partner. As we were giving our pitch, a delivery truck arrived and the staff brought boxes and boxes and boxes of each of those greens into the store. Sustainable income, but not for us. That same order would've emptied our entire farm and shut it down for the next month or so—and in cooler temperatures, the entire season! The entire point of this farm was to feed the community that has been neglected by corporate grocers. Fulfilling an order like that would be

the worst way to “sell out.”

Several years later, I took over the farm and my theorizing was again upended by managing the youth in their community. Our mission is to feed the community, which means that *we must grow mostly what the community wants and is immediately ready to purchas*e, not necessarily what may be easiest to grow on our land or what might be most enjoyable to grow. The upending comes in the form of untrained, undereducated, and over-eager youth; hot and humid Carolina summers; and the street life that can obscure the future for the sake of the present. Success isn’t determined by the yield of the crop, but by the consistency of the attendance of the youth and the response of the community on the market day. I like to say that at Three Sisters Farm and Market we teach the youth how to grow food, and themselves, organically.

The first day I ever came to the farm, I met the founder, Mr. Rickey Hall. After telling him of my background and interest in agriculture, he introduced me to the boys, who were sitting in the shade. “This is Mason. He is a scientist, and you should listen to what he has to say.” He then walked away. The boys’ attention shifted from nonplussed to noncommittal.

I began. “As, uh, Mr. Rickey said, I’m a molecular biologist, but what I __”

“What that mean?”

“In my lab, we study the genes and DNA of mice and humans. I’ve also worked with coral reefs, but what I want to talk to you about is this farm. You all have an amazing opportunity here—so many things beyond just growing vegetables can be done here. Obviously, you can grow your own ketchup, but since this is the South, we could then use that ketchup as a base for our own barbecue sauce.”

“Wait, what? Ketchup is the base for barbecue sauce?” one of the boys asked.

“Unless it’s the gold sauces, then it’s mustard. And Mr. Rickey was telling me y’all got bees too. We could be growing our own honey mustard out here!”

“How?”

“Grow the mustard, grind the seeds, and add honey!”

After they finished teasing the kid who asked how, I continued. “Look, the ‘product,’ what your favorite rapper raps about, is made with the same process that turns a tomato into ketchup: value-added production. A farmer grows coca (*Erythroxylum coca*), dries the leaves, grinds them, and purifies them into cocaine. A farmer grows poppies (*Papaver somniferum*), boils the pods, dries it, purifies it, and that’s heroin. These same processes make Doritos, hot dogs, sodas, all that.”

“What about weed?”

“That’s where I learned the majority of what you all already know: from growing it, back when I lived in DC.”

The conversation unexpectedly devolved into my personal experiences with marijuana (*Cannabis sativa*). After the deposition, I told them that I’d be back on Saturday and that I wanted them to think about what types of products they’d like to grow. One of them signed me off with, “See, I dunno, because I just learned something just now about ketchup being barbecue sauce.”

Consider how you can take advantage of an “imperfect” or surplus harvest to create value-added products. Don’t simply throw away produce that’s been damaged by weather or critters. Fruits and vegetables that are going into a sauce don’t need to look pretty. Produce with a bite taken out of it can be fermented to make fertilizer. Or you can make vinegar from leftover watermelon when you just can’t eat it for the eighth day in a row.

I once spoke with a man at a workshop who developed a company from growing and selling fertilizer inspired by Korean Natural Farming. Several summers later, I introduced this same idea to Mr. Rickey when facing a quintessentially urban problem of rodents taking one bite out of each of our ripened cantaloupes (*Cucumis melo*). It’s hard to be mad at them; you can

smell the patch standing up! “With all these bitten cantaloupes, we could ferment them and turn them into vinegar and use that at 1:500 to fertilize our crops!”

He indulged my excitement, and now I understand that although that was what it was, it was also what I needed to hear to inspire me to production. For him, the indulgence was all it could be, because managing a quarter acre of crops with fifteen seventeen-year-olds and a thirty-year-old nerd with his fanciful ideas is too much for one person.

Nonetheless, using the cantaloupes for fertilizer bounced around in my mind during my tenure as farm manager while instructing the youth to gather and dump the bitten ones into the wheelbarrow and bring them to the compost bin.

Fermenting and Fomenting Community

Although the potential for one to generate substantial revenue for oneself exists, I think the true value in creating value-added products, or shifting even a portion of your agricultural endeavor to value-added production, is in bringing together community. Consider the now-apocryphal origin story of the honeymoon: giving a gallon of mead (honey wine) to a newlywed couple to get to know one another better just after marrying. Those of us with access to bees, honey, or time can make that story become significant history for our loved ones.

A longtime friend of my wife’s stayed the night on a cross-country move. My wife wanted to do something nice for her and picked some flowers for a small bedside arrangement. Seeing the cut flowers awakened a long-dormant skill I cultivated in college, creating small flower arrangements in the quad in between classes. The lantanas (*Lantana camara*), rosemary (*Salvia rosmarinus*), and mountain mint (*Pycnanthemum muticum*) only had to be trimmed up and slightly defoliated to achieve her goal. Two different lantanas, pink and light yellow and orange and gold, brightened and brought out the long soft greens in the rosemary and the velvety leaves of the mountain mint.

It was the first time our friend had come to the house, met our son, and met me! The end of the house tour was the big reveal, and as she saw the snacks, water, and flowers, she said, “I was trying not to cry when I arrived, but I just gave up!”

Mugolio (Pine Cone Syrup)

Throughout my wife’s pregnancy, I continued to research value-added production by watching various culinary videos on YouTube, and that’s how I came across *mugolio*, or pine cone syrup, in a video by Forager Chef. I’ve been foraging medicinal and edible mushrooms for a while now, principally yellow reishi (*Ganoderma curtisii*), turkey tails (*Trametes versicolor*), and wild oyster (*Pleurotus ostreatus*) after getting my Wild Mushroom Food Safety Certification from Mushroom Mountain. I grew up picking mulberries (*Morus nigra*) with my dad and then teaching my friends and other closely related Siblings of the Soil how to get the wonderful nectar from Japanese honeysuckle (*Lonicera japonica*). So when I heard about pine cone syrup, a new browser tab turned into several views and daydreams about an accessible location for foraging, since a pristine environment cannot be found within the city limits.

Traditionally, the young pine cones of the mugo pine (*Pinus mugo*) of the Alps are used to make mugolio, “oil of mugo.” However, whatever pines are local to you will work just as well. I went to the spot in my daydream underprepared and harvested. I wrapped my undershirt around my hand and gently twisted the sharp, young, green pine cones off the branches. As I worked my way though, I made sure to give thanks to every tree I borrowed blessings from. When I returned home, I took my shirtful of pine cones, placed them in a bowl on the kitchen counter, and admired the hunt. I maybe gathered about forty or so baby pine cones.

To begin my experiment making mugolio, I placed the cones in two jars and filled them with brown sugar. I patted the jar down against the counter to bring the sugar to the bottom, then filled it up again to make a nice cap of sugar against the lid of the container. I sealed the jar and smiled at my creation. Now to play the waiting game!

The process goes something like this: As time passes, the sugar surrounding the pine cones forms an osmotic gradient, pulling the water out of the cones and into the sugar, forming a flavorful, aromatic solution. Once the yeasts on the cones activate, fermentation begins, and the jar must be degassed (or "burped") daily to release $CO_{2.}$ The degassing stage is a great time to smell the progression of the pine cone syrup and is important to keep the jar from exploding. It is helpful to make the small investment into an airlock so that you can consume, and not clean, the sticky, messy result of vigorous fermentation.

Over the days, my daydream became an experience, a harvest, a memory, and a new sensation through smell. Soon it was ready for a taste test! If you try this at home, please make sure not to open the lid all the way at first, as I did. One of my jars sprouted fur on top of the exposed and floating cones. Rather than be wasted, that jar went to the black soldier fly (*Hermetia illucens*) bucket, whose byproduct would later be turned into a rich compost (see my article in the *2025 Herbal Almanac* for an in-depth explanation of creating rich, black soil with this method).

When the fermentation stopped, within thirty days or so, I cooked the syrup down, heating the alcohol off, and gave the pine cones to the black soldier fly bucket. The hot, finished mugolio went into a clean pint mason jar, and I seated it in the fridge. I tried it after it had cooled down, after struggling to get the effectively vacuum-sealed lid off. The flavor buzzed, popped, and settled on my tongue well beyond the imagination of my daydream. Now I was on to something!

On Thanksgiving, a friend of ours made her way home from the Big Apple back down to South Carolina for work. We met her at her uncle's house, and I gave her a small jar of the mugolio I made earlier in the year. I could not have understood the significance to her. I was struggling to when she tagged me on Instagram along with someone with high culinary esteem. She had added it to her coffee, saying it was especially good this time of year. I thought she might have been referencing some of the health benefits, but she responded with something completely different: "My grandparents had some amazing pine trees in their yard when I was a kid, and I would lie

under them and listen to them, playing with the pine cones. They were my first friends. So it felt really apropos to receive the mugolio in my return home.”

Melon Syrups and Vinegars

As summer came and our baby boy arrived, so did melon season, and I wanted to try to make watermelon (*Citrullus lanatus*) and cantaloupe (*Cucumis melo*) syrups!

I started with the rest of the twenty-something-pound watermelon I couldn’t eat anymore by chopping it up into those grocery-store-size chunks and putting them in a quart mason jar. Repeating the mugolio process, I filled and packed the jar with brown sugar. I labeled the jar and again played the waiting game.

Before I went to sleep, I saw how the extracted water collected at the bottom of the jar, just like the mugolio did but on a much larger scale. I added some more sugar. By the next morning, the fruit was floating and what sugar didn’t dissolve sunk to the bottom. The fermentation was vigorous and the smell was glorious! After the fermentation stopped, I cooked the syrups down, more than for the mugolio, as I only had small jars, about to the consistency of honey. Into the fridge the syrups went, and now I was left with all of this alcoholic fruit.

I thought to try my hand at making vinegar by adding in some of the mother within Bragg apple cider vinegar. The fruit went into the jars, and I added, imprecisely, enough water to underline the word *mason* at the top of the jar. I then added enough apple cider vinegar to raise the water level to the top of the *mason*. This added enough opacity to the water that I was certain the *Acetobacter* in the mother would eat up all the alcohol and give us watermelon and cantaloupe vinegar! I covered the jar with a coffee filter and over the next four weeks, maybe six, played the waiting game once again.

Through the winter, I’d strap my son to my chest and go walking to get his morning nap. We’d do around an average of two miles in our neighborhood. One day we returned home, and I immediately noticed an

acidic smell—it was the vinegar. It was ready! I held the jar under my son's nose and he immediately recoiled, just like his daddy!

I taste-tested the cantaloupe and watermelon vinegars that night. Both were definitely acidic, and pleasantly so. The floodgates of the salivary glands rushed open, and there was just enough sweetness to help the medicine go down. The cantaloupe was extremely light. Later, we mixed it into a vinaigrette with olive oil, salt, pepper, onion powder, and garlic powder, and it brought a brilliant bouquet to an otherwise boring grocery store spring mix salad. But it was the watermelon vinegar that my friends and family continue to ask me about. Refreshingly floral and lively, it showed why a bee would get up early in the morning to pollinate the flower.

Let's not forget the fruit! As the pickled fruit is naturally sour, I'm thinking to blend them up with the syrups and ice and make some sour freeze pops or dehydrate them for sour fruit leather. With the tenderized texture, it will elevate a salad or a taco, or it can be used as a topping on your choice of grilled or smoked proteins.

Melon Probiotic Mocktail

Both the watermelon and cantaloupe vinegars are satisfying drinking vinegars. To make an extremely delightful probiotic mocktail, combine them with the 1 part corresponding melon syrup and 4 parts seltzer or sparking water.

The wait from July to January has been worth it. Discovering another level of taste from my garden—and sharing these creations with the community—has been the true value-add.

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Further Reading

Several of the topics mentioned in this article are discussed in more detail on my podcast *Jìgìjìgì*. Listen to these episodes or read their transcripts to learn more:

“Composts.” *Jìgìjìgì: Africulture Podcast*. August 1, 2019. Podcast, 28:25. https://africulturepodcast.com/compost/.
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[contents]

Cooking

How Sweet It Is: Preserving and Fermenting with Honey

Monica Crosson

There is something profoundly enchanting about beehives in a field of wildflowers. The boxes abuzz with the industrious bees juxtapose the harmonious artistry of nature, truly the perfect depiction of life's interconnectedness. We raised honeybees for several years, and I loved nothing more than the drone of their effort that rose above the birdsong and the sweet scent that mingled with that of the honeysuckle and Nootka rose.

My husband was the keeper of the bees. He loved it—but one day, he chose not to wear his gear while tending his hives and was stung multiple times. His dominant hand swelled so large he was unable to move his fingers. I told him I would take over until his hand healed and gladly donned the gear. He instructed me on how to use the smoker and watched from afar as I approached the hives. He hollered instructions, and I acknowledged with a clumsy thumbs-up, as the gloves were far too big for my hands. I opened one box and then another and let the smoke lull the bees so I could easily check for pests and the overall health of the colony.

It was the third and final hive that gave me some trouble. A couple of the bees were not pleased with my presence and quickly escaped, buzzing past me and straight to my husband, who was over fifty feet away. I watched as he slapped the air. One of the escaped bees stung his face, and I couldn't help but laugh at the situation. In fact, my fit of laughter had me on the

ground. My husband was okay—for whatever reason, the sting on his face raised no more than that of a mosquito bite.

A couple of years later, we lost our hives in a severe winter storm. But during that time, I learned to love and really appreciate honey for its treasure trove of benefits. We haven't raised bees since, but we do plan on giving it another try, hopefully soon. In the meantime, I support local beekeepers and use honey in most of my baking and a lot of my food preservation and fermentation techniques.

A Gift from the Bees

Often hailed as the perfect food due to its nutritional benefits, honey is created through an intricate and fascinating process. Forager bees extract nectar from blooms with the use of their straw-like tongue, called a proboscis, and it is stored in their stomach (crop). Once returned to the hive, the foragers regurgitate the nectar and pass it to the house bees through mouth-to-mouth feeding (or trophallaxis). Enzymes added through this process break down the complex sugars to simple sugars like glucose and fructose. House bees continue to regurgitate and re-drink the nectar until the water content is under 20 percent. It is then deposited into the honeycomb, where the bees use their wings to fan it to further reduce the water content to 17 to 18 percent.

Some may ask, where does the collection of pollen come in on the honey-making action? It doesn't. But pollen does play a vital role in the health of the colony, as it is their primary source of protein and is essential for the growth and development of the larvae. A single bee will only make approximately 1⁄12 teaspoon of honey in her entire life, but with most hives averaging between 50,000 and 80,000 bees, a strong hive can give you nearly 100 pounds of honey per season.

A Bounty of Benefits

Honey, with its rich flavor and myriad health benefits, is a true testament to

the wonderful symbiotic relationship between bees and nature. But is honey worth its hype? You bet it is!

Throughout history, honey has played a vital role in various cultures. The Egyptians considered honey an item of royalty and used it in trade, medicine, religious rituals, and the embalming process. For the Greeks it was esteemed as a source of wisdom and thought to be the food of the gods. Evidence from archaeological findings shows that mead (fermented honey wine) was made approximately 8,000 to 9,000 years ago in both Asia and Europe.

Ancient peoples intuitively knew that honey was not only delicious but also packed with health benefits. Rich in antioxidants, enzymes, vitamins, and minerals, honey can boost the immune system, soothe a sore throat, and promote digestive health.[13] Its antibacterial and anti-inflammatory properties make it an excellent natural remedy for wounds and skin conditions. It is also a natural food preservative, as its sugars pull water from foods being preserved through osmosis, leaving microbial cells dehydrated and thus safe from spoilage.

Benefits of using honey in your preservation and fermentation include the following:

Low Water Content: Honey is hygroscopic, meaning it has a low water content and can draw moisture from its environment. This inhibits the growth of bacteria and fungi.

Acidity: Honey has a low pH (around 3.2 to 4.5), creating an acidic environment that is hostile to most microbes.

Antioxidants: Honey contains antioxidants that contribute to its preservative qualities.

Fermentation and Preservation with Honey

Preserving and fermenting with honey is a time-honored process in which honey's natural sugars, enzymes, and antimicrobial properties transform raw ingredients into complex, flavorful, and often health-enhancing foods.

When honey is used as a preserving agent, the result is a tasty flavor enhancer that helps fruit and meat retain moisture, reduce the risk of bacterial growth, and increase shelf life.

Ways to Use Honey in Preservation

Honey Dried Fruits: Coat sliced fruits with honey before drying them. This method can be used with a food dehydrator or by air drying. The honey helps retain moisture and adds a sweet flavor while preventing mold growth.

Honey Curing: Marinate meat or fish in a mixture of honey, salt, and spices. This not only preserves the meat but also enhances its flavor. The honey creates a protective barrier that inhibits bacterial growth.

Smoking with Honey: When smoking meat, a honey glaze can be applied to create an additional preservative layer and impart a unique flavor.

Fermenting with Honey

Raw honey contains natural yeasts and bacteria that, when mixed with other ingredients and exposed to the right conditions, can begin the fermentation process. The sugar in honey (mainly glucose and fructose) serves as the food for the microorganisms, which convert the sugar to alcohol. Most fresh fruits and vegetables have enough natural moisture content to start the fermentation process, but dried fruit such as figs, apricots, and dates need moisture added to the ferment. By adding water at the rate of 3 percent of the weight of the honey, you will guarantee fermentation.

Benefits of Honey Fermentation

Enhanced Nutritional Profile: Fermentation can increase the bioavailability of nutrients and introduce beneficial probiotics, supporting gut health.

Extended Shelf Life: The fermentation process naturally preserves foods, reducing the need for artificial preservatives.

Unique Flavors: Fermentation with honey produces complex, layered flavors that enhance culinary creations.

Natural Sweetener: Honey’s natural sweetness can balance the tartness

often associated with fermented foods and beverages.

A Few Simple Recipes

Honey Fermented Garlic

Both garlic and fermented honey can be used in your favorite recipes, enjoyed on their own as an immune-boosting snack, or taken to ease the symptoms of a cold or flu.

You will need:

Wide-mouthed pint jar with lid

Peeled cloves from 3–4 bulbs (fill 1 cup)

1 cup raw honey

Place the garlic cloves in a clean pint jar and pour in 1 cup honey (or more if needed) to completely cover the cloves. Check the ferment regularly. Stir or shake the jar every few days to ensure even fermentation, and burp it to release built-up gases. You will know it's working when the honey begins to thin and forms bubbles. Ferment the garlic for approximately 1 month before enjoying. Store in a cool, dark place. The garlic will have a chewy texture with a sweet, tangy taste. Use within 1 year.

Honey-Fermented Fruit

You will need:

Wide-mouthed quart jar with lid

About 2 cups fresh sliced fruit or berries

About 2 cups raw honey

Layer the fresh fruit and honey until the jar is ¾ full. Secure the lid. Check your ferment every few days. Burp the jar by opening the lid to release gases and stir or shake to ensure even fermentation. You will know the fermentation process is working when the honey runs thin and bubbles form. You can tell it's done when bubbles form at the top of the jar and the

fruit becomes “wrinkly.” Store in the refrigerator and enjoy as a snack or part of your favorite recipes within 2 months.

Honey-Fermented Syrup

This syrup is perfect for cold and flu season.

You will need:

- Wide-mouthed quart jar with lid
- About 2 cups raw honey
- 1 fresh, sliced lemon
- 1 cup chopped ginger root
- ¼ cup fresh, chopped thyme

Layer the fresh lemon, thyme, and ginger root with honey, ensuring the fresh material is completely covered. Secure the lid, and as with other ferments, burp the jar daily and stir or shake to ensure fermentation. You will know it’s working when the honey thins and bubbles form. Allow it to ferment for 1 month.

Remove the lemon, ginger root, and thyme (as it will be fully fermented) and enjoy them in other recipes. Store the syrup in the refrigerator for up to 1 year. Take a spoonful daily to boost the immune system, use it to ease the symptoms of a sore throat due to cold or flu, or add it to your favorite recipe.

Mead

Mead, often referred to as “honey wine,” is perhaps the most well-known product of honey fermentation. This ancient beverage, with roots stretching back thousands of years, was enjoyed by cultures from the Vikings to the Greeks. The basic process involves mixing honey with water and allowing natural or added yeast to ferment the sugars, producing alcohol.

You will need:

- 2–3 pounds raw honey
- 1 gallon distilled water

2.5 grams yeast (you'll use half a packet; wine or mead yeast preferred)
1 gallon carboy (glass jug and airlock specifically designed for wine or mead making)

Before you begin, make sure all equipment is washed and sanitized.

Dissolve the honey in ⅔ of the water. Pour the mix into your carboy and then add remaining water, allowing 2 inches of head space. Add the yeast and store the remaining yeast in the refrigerator. Give it a good shake to ensure everything is mixed. Replace the lid with your airlock and allow the jug to ferment for several weeks to months, depending on desired alcohol content and complexity of flavors. The fermentation is complete when the airlock stops bubbling. You will see little to no bubbles. The mead can then be re-bottled and aged further to develop its flavors.

The Taste of Generosity

Every time I use honey, I visualize a story of sunlight and blossoms, of colonies of bees who tirelessly gather nectar and create the elixir of life, and the wonderous working of the natural world. The art of fermentation is another chapter of that story in which an ancient practice takes the raw sweetness of honey and transforms it into something richer, deeper, and infinitely complex. Enjoyed in its pure form, used as a natural remedy, or incorporated into recipes, honey reminds us of the generosity of the bees, how the sweet can become profound, and our connection to the timeless rhythms of nature.

Resources

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[contents]

Open Ajonjolí!

Linda Raedisch

I have a little bottle of toasted sesame oil in my refrigerator. It lasts me all year. I have a bigger bottle of sesame seeds in my spice cabinet. That bottle doesn't last quite as long, because I use it to top the sesame cookies I bake for Lunar New Year. You'll find the recipe at the end of this article.

Sesamum indicum looks a lot like a weed. It's not a member of the mint family, but you would be forgiven for mistaking it for one. Most varieties are dark green, but some have purplish stalks and leaves. Its trumpet-shaped white (sometimes pink or purple) flowers are nothing to write home about; it's the long, chambered seed pods that count.

The Sumerian scribes who stayed up late each night pressing their reed styli into damp clay tablets needed a reliable source of light. They filled their clay lamps with sesame oil, which they got from the Indus Valley far to the east, first as refined oil, which they called *ilu* or *ellu*, adopting the Dravidian name for sesame, then as seeds, which they eventually started growing themselves. By the time Sumerian had been replaced by Akkadian as the lingua franca of the Fertile Crescent, sesame had a new name: *šamaššammū*. Even after the growing of olive trees took off, sesame was the oil of choice in Mesopotamia, especially in the ancient kingdom of Urartu, today's Armenia, at the northern fringe of the Fertile Crescent. Turning sesame seeds into oil was no simple affair; an Urartian processing facility from around 700 BCE was made up of sixty rooms containing giant mortars and pestles, tufa troughs for catching the oil, and man-sized clay vessels for

storing it in.[14]

The oldest sesame seeds in the world were found in a charred black lump in the ruins of Harappa, one of the cities of the Indus Valley civilization, which included today's northern India, Pakistan, and part of Afghanistan. The seeds are about 4,000 years old.[15] Are they the remains of an ancient Harappan kitchen mishap? Possibly.

Spiritual Use

I asked a South Indian library coworker of mine, who cooks all her own food and grows a lot of it too, if she had any thoughts about sesame. Asking is always a good idea: You never know what doors might be flung open to you, and like Ali Baba in *One Thousand and One Nights*, I've had some pleasant surprises.

I was hoping to get one of my coworker's recipes for Diwali sweets, but she had something much better to offer. A little way into the conversation, I realized I was talking to someone who uses sesame oil the same way the Sumerians and Harappans had. Rising each morning before dawn, she washes, proceeds to the household altar, and lights a little clay lamp filled with sesame oil. For a wick, she uses a short length of cotton, braided by hand. No little bottles of sesame oil for her; she buys it in bulk. Sesame in her native language of Telugu is *nuvvulu*, but she also mentioned a Hindi word, *gingely*, pronounced "jinjelly."

I go through a lot more olive oil in a year than sesame oil. The olive was domesticated by 2500 BCE, not soon enough to fill the lamps of the Sumerians, who were already peaking about that time, but certainly in time for Moses to use a *hin* (about a gallon) of olive oil when mixing up a *chrism*, or holy anointing oil, in Exodus 30:22–33. According to the Armenian Apostolic Church, some of that chrism was still kicking around in the time of Jesus, who entrusted a little bottle to one of his apostles, who took it to Armenia and hid it under a myrtle tree. The bottle was kept safe until the first Armenian church could be built around 300 CE.

Since then, a new chrism, or *miwron* (also spelled *myron*), has been

brewed every seven years, an event culminating in the Feast of Blessing of the Holy Chrism in late September. The ceremony begins forty days before the feast day, when olive oil and wine are mixed with over forty Old Testament herbs, including spikenard, balsam, marjoram, cinnamon, aloes, cubeb, and galingale. The mixture is heated for three days and left to ferment in a lidded silver cauldron covered with seven veils. The leftovers from the previous batch are always added to the new batch, making it a kind of holy perpetual soup.[16]

That first chrism was olive oil–based, but olive trees can't cope with the cold Armenian winter. Sesame, however, is an annual; it doesn't need to survive the winter. As long as the seeds are sown before the rising of the Pleiades in summer and the plants get plenty of sun, they'll do fine. By the time the Armenians became Christian, they'd been growing sesame for a thousand years and burning the dry stalks to warm themselves in the winter. It was natural for them to put sesame oil in their miwron, which they continued to do until the thirteenth century, when they gave in to pressure from the Greeks. (The most recent batch of miwron, prepared in September 2022, was made with extra-virgin olive oil.)

We're told that when Gregory, the first *Catholicos*, or leader of the Armenian church, assumed the position, he smashed all the pagan idols in Armenia. Gregory was consecrated in Caesarea, far to the south, so he was probably anointed with olive oil, but as soon as he got home, it would have been black sesame oil all the way. From the beginning, it was black, not white, sesame seeds that had been grown in Urartu and then Armenia, and it was probably with black sesame oil that those pagan idols had been anointed in pre-Christian days.

Sesame is tíla *in Sanskrit, the Indo-European language in which the Hindu scriptures were eventually written down. The Indo-Europeans were relative latecomers to the Indus Valley, where sesame had been cultivated since about 5000 BCE. It was an older Dravidian word for sesame that was adopted by the Sumerians.*

My South Indian coworker lights her sesame oil lamp daily “for God,” by which I assume she means the general, all-around godhead, but she mentioned that some Hindus offer sesame oil specifically to Lord Shani, the personification of the planet Saturn, who is depicted as either black, brown, or dark blue. This intriguing nugget of information led me to the Tamil tradition of the *ellu villaku*, or black sesame oil lamp. Yes, Tamil, like Telugu, is a Dravidian language, and there’s that word *ellu* again. The ellu villaku is filled with gingely oil. In place of a cotton wick, a bundle of black sesame seeds wrapped in black cloth is placed in the oil and lit.[17]

We can’t be sure what religion the people of the Indus Valley Civilization practiced, or what language they spoke, because their writing has never been deciphered. Just as Mesopotamian beliefs foreshadowed the religion of the Old Testament, the Indus Valley people’s rituals probably incorporated at least some elements of what we now call Hinduism. Perhaps that charred mass of sesame seeds at Harappa was not the result of a cooking accident but a deliberate offering to Shani.

Did the Urartians light lamps to honor their own version of Lord Shani? I wouldn’t be surprised. After all, the Indus Valley supplied Mesopotamia with a lot more than sesame; it also offered carnelian beads, cotton, and a strange kind of honey pressed from a reed (i.e., sugar). By trading with the Indus Valley people, the Mesopotamians would have been exposed to new words, ideas, and even gods. Lord Shani’s special day is, in fact, Saturday, which the Romans named for Saturn, and which also serves as the Jewish Sabbath.

Cooking with Sesame

But let’s get back to sesame for eating. My sesame seed horizons were broadened many years ago when we lived downstairs from an Israeli family

who introduced me to the open-faced *labane* sandwich—half a bagel spread with labane (a thick, strained yogurt you can only get in Middle Eastern stores), topped with a drizzle of olive oil and a generous sprinkle of *za'atar*, a blend of toasted white sesame seeds, dried sumac (*Rhus coriaria*), oregano, thyme, and possibly also marjoram, cumin, and coriander, depending on who's mixing it up. If you decide to make your own za'atar, use culinary sumac spice; the sumac that grows in the wild might be poisonous. If you can't get labane, Friendship brand farmer's cheese is an acceptable substitute.

On Sunday mornings, my Israeli neighbors drank coffee and ate *halvah*, a very sweet, melt-in-your-mouth dessert made of *tahini* (sesame paste) and sugar. Halvah comes in a loaf, and the idea is to serve it in slices, but it's so delicate that you usually end up with shards.

I also learned to make tahini sauce, a laborious process requiring as much faith as elbow grease: You start by putting some tahini, which is the consistency of gritty peanut butter, in a bowl. You add a little lemon juice. You add a little water. The tahini seizes up. You add more water. It gets thicker. More water. Even thicker. You keep adding and stirring, to the best of your ability, cause it's really not stirrable at all right now, until the stuff undergoes some kind of spiritual conversion and consents to become sauce. Add a little garlic, salt, and olive oil. Garnish with paprika and dried parsley, and you're ready to dip in with your pita chips.

Ali Baba would have eaten similar fare. And if he'd ever walked through a sesame patch in late summer, he would have understood that "Open sesame" is a perfectly logical spell for opening a door: the ribbed green capsule that is the sesame fruit splits open when ripe. But even after the fruit bursts its seams, the seeds cling to the ribs, kind of like those of a jalapeño. Which brings me to Mexico.

It was only after I mentioned my latest project to one of our library patrons that the doors to the world of sesame really popped open. Here was someone who had actually grown sesame! He'd helped sow and harvest it as a child on his family's farm on Mexico's Pacific coast. They didn't grow sesame to sell; it was just a small patch near the house, and the seeds were

for the family's own use. The library patron couldn't remember if they'd pulled the plants up by the roots, as the Sumerians had, or if they'd cut them, as is more common, but he did recall how they'd tied the plants in bundles of four and left them standing upright in the sun. Once the pods were nice and dry, they upended them and shook them over a cloth, the tiny seeds making, I imagine, a sound like *šamaššammū* as they fell. His mother then toasted the seeds in a giant *comal* (a flat griddle), added sugar and honey, spread the mixture out, and cut it into candy. He warned me I wouldn't be able to grow sesame here in New Jersey because it's too cool and wet.

Just for the heck of it, I asked him what sesame is in Spanish, fully expecting him to say "*sésamo*." After all, the Spanish version of *Sesame Street* is *Plaza Sésamo*. He surprised me again by saying "*ajonjolí*." The letter *j* in in Spanish is pronounced like English *h*. Figure in a consonantal shift in which a *dj* sound got softer and softer with time, and you have a word very much like the Hindi word for sesame, *gingely.* Spanish, then, has two words for sesame, one from the Middle East and one from India.

Sesamum indicum didn't only travel west; it traveled north and east. The oldest sesame seeds in East Asia were found in a dusty cemetery in Turfan in today's western China, brought there via the Silk Road sometime in the 700s CE. The seeds were a variety of colors. In Chinese cooking today, white sesame seeds are made into a candy very much like the *dulce de ajonjolí* my library patron's mother made. Black sesame seeds are ground, mixed with sugar, and put inside sweet buns. But it is the Chinese sesame cookies that are my favorite.

To celebrate the Year of the Dragon in 2024, I attended a Lunar New Year tea tasting where I got to eat fancy, boat-shaped pastries filled with a delicious, sticky-sweet mixture of both white and black sesame seeds.[18] I don't have a boat-shaped pastry mold, so I haven't tried to make them myself, but my sesame cookies are almost as good.

Linda's Sesame Cookies

Our tea master served sesame boats with *rou gui* oolong, a faintly

cinnamony tea from China’s Fujian province. My cookies aren’t so fancy, so you can serve them with any unflavored green or black tea. This recipe makes about 3 dozen cookies.

You will need:

Enough sesame seeds (black and white, mixed together) to cover the bottom of a large, shallow bowl, like a pasta bowl, and then some (about 1 cup)

1 stick butter, softened

1 cup sugar

½ teaspoon vanilla extract

½ teaspoon coarsely ground aniseed

1 egg

2 cups flour

1 teaspoon baking powder

2 Tablespoons milk

Toast the sesame seeds on low heat in a nonstick frying pan just long enough for the white seeds to turn golden. Pour them into a shallow bowl and set aside.

Cream the softened butter together with the sugar, vanilla, and aniseed. Stir in the egg. Stir the baking powder into the dry flour and add it to the rest of ingredients, alternating with milk, to make a stiff dough. Shape the dough into a ball, wrap it in plastic, and chill it for about half an hour.

Preheat the oven to 350°F.

Pinch off a bit of dough and roll it into a ball bigger than a marble but smaller than a Ping-Pong ball. Drop it in the sesame seeds and pat it down gently. Place the ball, seed side up, on a greased or parchment-lined cookie sheet. Repeat with the rest of dough and bake for about 15 minutes or until they turn pale gold. Let the cookies cool, arrange them on a plate with a tangerine in the middle, and serve with tea.

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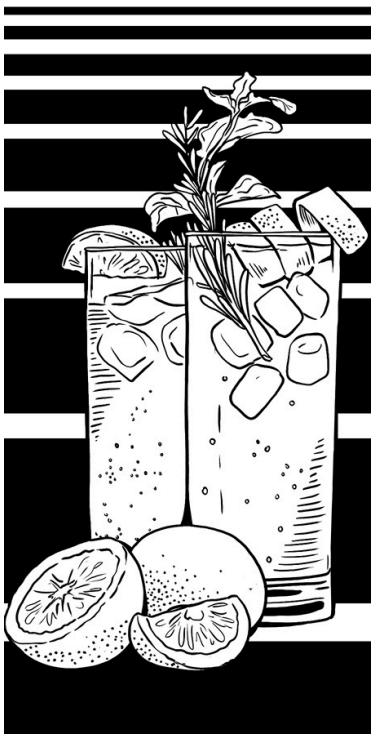
[contents]

Herbal Mocktails

Sara Mellas



When it comes to herbal preparations, one of the first things that comes to mind is tea. Given endless varieties to choose from, it's no secret that drinking herbs is not only delicious but also offers a myriad of health benefits. While herbal tea is most often made from dried herbs, fresh herbs have a place in beverages as well. Beyond tea, mocktails—the nonalcoholic version of cocktails—are a wonderful way to make use of herbs. By muddling, infusing, and garnishing with different types of fresh herbs, you can create uniquely flavored and impressive-looking mocktails that emulate something you'd find at an upscale bar. They're a much more enticing alternative to traditional cocktails than plain soda or juice, and just like herbal tea, they promote well-being.

The following is a guide to how to mix up herbal mocktails at home, including five original recipes to get you started.

Cheers!

Helpful Tools

Some barware that's helpful to have for making mocktails includes a cocktail shaker, strainer, cocktail stirrer, muddler, jigger, and paring knife. Highball (tall) glasses, lowball (short) glasses, martini glasses, champagne flutes, and copper mugs are pieces that are great for making homemade mocktails look and feel like you've ordered them from a bar, but by no

means are any of these things necessary. You can simply mix and measure your mocktails with a lidded jar and measuring spoon and serve them in whatever glasses you have on hand.

Serve Several

The recipes provided in this chapter yield one to two servings as written. If you're looking to make several mocktails to serve a group, it's easy to adjust the quantity of ingredients to yield as many servings as you need.

When scaling ingredients, these are some measurement conversions to keep in mind:

½ ounce = 1 Tablespoon
1 ounce = 2 Tablespoons
2 ounces = ¼ cup
4 ounces = ½ cup
8 ounces = 1 cup

Make It Ahead

If you're hosting a get-together and want to make a batch of mocktails ahead of time, juices, teas, sweeteners, and herbs can be mixed in a pitcher up to four hours in advance. Any fresh fruit, sparkling beverages, and ice should be added right before serving.

Get Creative

The recipes that follow are just examples of the ways you can incorporate herbs into your mocktails. Use them as inspiration, or experiment with entirely different herbal flavor combinations. Below are some common herbs and the flavors with which they pair particularly well.

Thyme: Citrus, honey, peach, apple, vanilla, and cranberry
Rosemary: Lemon, tonic, blackberry, pomegranate, apple, and cranberry

Mint: Chocolate, strawberry, blackberry, grapefruit, melon, pineapple, lemon, and lime

Lavender: Lemon, strawberry, blueberry, raspberry, vanilla, and honey

Basil: Strawberry, cherry, watermelon, and tomato

Check out the cocktail garden plan on page 266 for some ideas on growing these herbs in your own space. Ginger, chamomile, lemon balm, and tarragon are just a few of the countless other herbs that are worth reaching for when crafting mocktails.

Another fun way to infuse herbs into your mocktails is to make herbal ice! Lay one-inch sprigs of your herb of choice (you'll likely have to trim them to this size) vertically in an ice cube tray, so that they partially extend upward out of the tray. You can also add berries, cranberries, pomegranate arils, or finely chopped stone fruit to the tray for extra color and flavor. Fill the tray to the brim with water and set it in the freezer until fully frozen. Once frozen, you can use herbal ice in still or sparkling water, black or green tea, lemonade, or even coffee!

Herbal beverages don't all have to be tea—
fresh herbs make for fun and creative mocktails
that can be enjoyed on any occasion!

Recipes

The five recipes that follow are my favorite herbal mocktails, with some that are suited for warmer weather and others that are festive for holidays and colder months. But it goes without saying that, like many of the herbs used here, mocktail making is a perennial activity. Be sure to drink happily.

Strawberry Basil Smash

Vibrant and sweet, this uniquely flavored mocktail is a great way to use early summer produce. Try it as written with strawberries, or use blackberries for a drink that's a bit more tart. You'll never miss the bourbon! Makes 1 drink.

You will need:

- 4 fresh strawberries, rinsed and chopped, plus 1 more for garnish (optional)
- 2 leaves fresh basil, torn
- ½ ounce fresh lemon juice
- ½ ounce simple syrup, or more to taste
- 4–5 ounces club soda

Place the chopped strawberries and torn basil in a wide cocktail glass. Add the lemon juice and simple syrup, and gently "smash" with a muddler until the berries are the consistency of compote. For a sweeter drink, add an additional ¼–½ ounce of simple syrup.

Fill the glass with crushed ice and pour in the club soda. Stir gently to combine.

Garnish with an additional fresh strawberry, if desired, and enjoy.

Honeydew Mojito

Traditionally made with rum, lime juice, and fresh mint, the mojito is a simple cocktail that still feels fancy. This nonalcoholic variation trades the rum for cool honeydew melon that adds just the right amount of sweetness. Makes 1 drink.

You will need:

- 4 fresh mint leaves
- 1½ teaspoons unrefined cane sugar
- ¾ ounce fresh lime juice
- 1 Tablespoon roughly chopped honeydew melon
- 4 ounces sparkling mineral water
- 1 lime slice, for garnish

1 sprig fresh mint, for garnish

Place the mint leaves, sugar, and lime juice in a highball glass. Muddle against the bottom of the glass for 25–30 seconds to release the mint's oils. Add the chopped honeydew and gently crush it.

Fill the glass with crushed ice. Top with sparkling water and stir to combine.

Garnish with a lime slice and sprig of mint, and enjoy.

Lavender Lemon Soda

Few things evoke summer more than an ice-cold glass of homemade lemonade. With just the right amount of lavender, this mildly floral and effervescent version is ideal for a relaxing evening outdoors. Be sure to use culinary lavender leaves, which can be found online or in natural food stores with the bulk loose-leaf teas and spices. Makes 2 large drinks.

You will need:

1 teaspoon dried culinary lavender

2–3 Tablespoons granulated sugar

½ cup boiling water

Scant ½ cup freshly squeezed lemon juice (about 2 lemons)

12 ounces sparkling mineral water

2 lemon slices, for garnish

Place the lavender and sugar (to taste) in a heat-safe jar and pour in the boiling water. Stir to combine. Set aside for 20 minutes.

Strain the mixture through a fine-meshed sieve into a large measuring cup. Add the lemon juice and stir to combine.

Divide the lavender-lemon mixture evenly between two tall glasses and fill with ice. Top each glass with sparkling water and stir to combine. Garnish with lemon slices and enjoy.

Cranberry Mule

Served in a characteristic copper mug, a Moscow mule is a zippy cocktail that combines vodka, ginger beer, and lime juice. Swapping the vodka for

tart cranberry juice, this mule is wonderful during the fall and winter holidays. Makes 1 drink.

You will need:

1½ ounces cranberry juice

½ ounce fresh lime juice

1 Tablespoon fresh or frozen cranberries (optional)

4 ounces ginger beer

1 sprig fresh mint, for garnish (optional)

2 small pieces crystalized ginger, for garnish (optional)

Place the cranberry juice and lime juice in a copper mug and add the whole cranberries (if using).

Fill the mug with crushed ice. Pour in the ginger beer and stir gently to combine.

Garnish with a sprig of mint and crystalized ginger, if desired, and enjoy.

Apple Rosemary Tonic

Equal parts sweet, bitter, and earthy, this simple-to-make tonic looks rather impressive with slices of apple and sprigs of rosemary layered in a tall glass. It's perfect for celebrating the apple harvests in early fall. You can also try it with fresh thyme instead of rosemary. Makes 1 drink.

You will need:

2½ ounces apple juice

1 sprig rosemary, cut into 3 segments

3 thin apple slices, plus 1 for garnish

4 ounces tonic water

Pour the apple juice into a tall glass.

Fill the glass about ¼ full with ice. Add an apple slice and rosemary segment. Repeat twice more until the glass is almost full, then pour in the tonic water. Stir gently.

Garnish with the remaining apple slice and enjoy.

[contents]

Freezer Meals 101

Raechel Henderson

Freezer meals provide busy families with nutritious meals that can just be popped into the oven, microwave, or slow cooker. They take a little bit of planning up front, with the payoff being that you don't have to think about the question "What's for dinner?" later on. There are thousands of recipes for slow cooker "dump meals"—where you dump the contents of a freezer bag into a slow cooker and let it cook—as well as recipes for freezer meals that go into the oven. But if you are new to this form of freezing and cooking, you might feel a little overwhelmed by all the choices.

Why Make Freezer Meals?

There are multiple benefits to preparing freezer meals. The main reasons are better nutrition, saving money, and saving time.

Creating your own freezer meals puts you in control of just how much sugar and salt goes into your meals. You can adjust those two factors to suit your own dietary needs. Making your own freezer meals also allows you to add more variety to your diet, as you can prepare a couple of different options to supplement your weekly taco Tuesday and pizza Friday nights. And you can find freezer meal recipes to suit just about any diet out there, from Paleo to Mediterranean.

Preparing and eating freezer meals will save you money, as well. Instead of going out to eat or ordering in, you'll have meals already prepared and just needing to be popped into the oven, slow cooker, or microwave. And

while the price of groceries is ever changing, cooking at home is still cheaper than the other options.

Finally, having freezer meals on hand will save you time. Having them already prepared and ready to be cooked means less time spent in the kitchen during the week. Preparing the freezer meals in one go or during the weekend can take as little as an hour or two, which then frees up your weekday evenings for other things. Even with those meals that go into the slow cooker, all you are doing is opening up a bag, dumping the ingredients in the slow cooker, and then letting it cook.

Before You Start

There are a couple of questions you'll need to ask yourself before you start. The answers will help you decide what kind of freezer meals you'll make, how many, and what you'll need for supplies.

How Much Space Do You Have?

Most families only have a freezer in their refrigerator, but you might have a separate freezer you can use as well. The amount of space you have will determine how many freezer meals you can set aside, as well as the size of them and what kind of containers you can use. Meals in freezer bags are good for small spaces because they can compress and take up less space. Meals in containers will need more space to accommodate the shape and size of the container. You can gauge space by placing empty containers in the freezer.

How Many People Are You Feeding?

This will determine not only what kinds of freezer meals you make but also what size containers you'll need to have on hand and how much space that will take up in your freezer. Consider how many people you are feeding with each meal and ensure to have at least one serving per person. Adjust the number of servings per person based on how much your family eats or, if you're cooking for one, how many servings you'd like throughout the

week. Take into consideration whether your family is one that likes to eat leftovers. If that is the case, you can up the number of servings. If not, keep the servings proportional to what your family will eat so there isn't any waste.

How Will You Cook Your Meals?
This will determine what sort of containers you use. If you will be using a slow cooker, you can use freezer bags or reusable plastic containers. If you will be putting the meals in the oven, you'll want to use a suitable container. The same goes for if you will be microwaving your freezer meals. Read on for a list of containers and how they are used to help you decide which one will be right for your cooking preferences.

Supplies

You'll need a few supplies before you start your freezer meal journey. You may already have some of these on hand. You can also pick up all these supplies from your local dollar store. Which containers you use will depend on how you will be cooking your meals. The most common containers include freezer bags, plastic or glass containers, and disposable aluminum trays with lids. You'll also need a marker to label your containers. You don't want to assume that you'll know what is in a particular bag or container just by looking at it.

The simplest containers to use are freezer bags. They come in a variety of sizes, and you can mark the outside easily. These are good for "dump meals" or if you are going to be cooking your meal in a pot on the stove. When using the freezer bags, make sure to squeeze out any air before sealing them. This not only helps reduce the chance of freezer burn, but it also compresses the bags so that they take up less space in the freezer.

You may already have plastic containers on hand that you can use for freezer meals. These are good to use for microwaving meals, as they can go directly from the freezer to the microwave. They can also be used if you are making dump meals for the slow cooker or a pot on the stove. Plastic

containers are desirable because they can be used multiple times. Choose plastic containers that are BPA-free. BPA is a chemical that is used to harden plastic in containers, and some studies have shown that it can affect estrogen in animals.[19] Because of this, some scientists recommend reducing exposure to BPA. Look at the label of the containers you are buying; if they are BPA-free, they should say so.

Disposable aluminum containers with lids are available from various stores. They are best suited for meals that will go directly into the oven from the freezer. Dollar stores provide the most economical options.

You can use glass containers if they are labeled as freezer safe. When using them, make sure that the food cools down before putting the container in the freezer, as the sudden temperature change can affect the container. Never take a glass container from the freezer and place it right into the oven, as, again, the temperature change could cause the glass to crack. When you are freezing meals with a liquid component, only fill the container three-quarters of the way full to account for expansion. And finally, if you are using freezer-safe jars, don't tighten the lids until the food is completely frozen. Do not reuse pasta jars or other glass containers that aren't rated as freezer safe. No one wants shattered glass all over their freezer.

What Can Be Frozen

The variety of foods and meals that can be frozen to be reheated or cooked later is extensive. I have frozen meat, pasta, vegetables, and fruit. Some foods don't freeze well, however: These include milk, yogurt, and fruits and vegetables with a high water content, such as lettuce, cucumbers and melons. Raw potatoes also don't freeze well. As the freezer temperature is maintained at 0 degrees Fahrenheit, this is roughly how long well-freezing foods will last:

Stews and Casseroles: 2–3 months
Freezer Meals: 3–4 months

Raw Fruits and Vegetables: Up to 6 months

When you are freezing ingredients for soups and stews, place all the prepared ingredients into the freezer bags or plastic containers without the broth. You'll add that when you dump the ingredients into the slow cooker or pot on the stove. This means not only will the meal last longer in the freezer, but it will also take up less space. You can also freeze leftover or already cooked soup for later reheating.

For casseroles, pasta bakes, and other meals that you will cook in the oven, freeze in aluminum tins. When it is time to cook, pull the tin out of the freezer and place in the preheated oven. Cook it according to the recipe directions.

You can go beyond ready-made meals and prepare and freeze smoothie ingredients. Prechop any fruits like bananas and pineapples into bite-size pieces. Portion out the ingredients into single servings and place them in freezer bags. You can remove an individual portion from the freezer and drop it into your blender with the liquid of your choice (milk, water, fruit juice, etc.) and blend. I keep a bag of spinach in the freezer solely for smoothies.

You can also keep containers of chopped vegetables for recipes. If you know you'll be making a meal that requires a lot of prep work, you can do that ahead of time by chopping, dicing, or mincing your vegetables and freezing them in containers or freezer bags. I keep diced celery, onion, and green peppers on hand for skillet meals and omelets. I also keep a container in the freezer where I throw odds and ends from vegetables. I clean the container out once a month to make vegetable broth with the contents.

You can also freeze individual portions of meals for single-serve eating. Cook the meal and then portion it out into plastic containers and freeze. To eat, put the container in the microwave and cook until heated through. The same can be done with leftovers, freezing them in plastic containers (if reheating in the microwave) or in aluminum tins (if reheating in the oven).

Freezer Meal Tips

Make sure to label your freezer meals. List the name of the recipe and the date it was frozen. This will help you make sure to use up meals while they're fresh. It's also easy to miss and forget about unlabeled containers in the back of the freezer, so this helps avoid food waste. You can use a marker on the lids of aluminum tins and on freezer bags. For containers, consider using masking tape and markers.

When freezing leftovers or precooked meals, let them cool completely before putting them in the freezer. This helps keep the rapid change from hot to cold to a minimum, which is important especially if you are using plastic containers. The temperature change can warp the container, loosening the lid and possibly allowing air to get in.

To ensure even reheating in the microwave, make sure to stop it once in the middle of the cooking time and stir the contents of the container.

Plan your freezer meals around what is in season. Foods taste better the fresher they are. Since freezer meals can keep for up to three to four months, you can make several during the summer and fall months to last you through the winter when there are less fresh produce options.

Additionally, plan freezer meals around what is on sale. I like to look at what has gone on sale at the grocery store and then find the recipes for my meals using those ingredients. That way I am getting extra savings for the week.

Keep your freezer meals varied to avoid burnout. Find three to five different recipes that you like and keep them on hand. Add in different recipes from time to time so that you don't get tired of eating the same old thing.

Recipes

Try the following recipes to start your freezer meal journey. Both are packed with flavor and make several servings.

Slow Cooker Chicken Paprika

Serve this meal over cooked egg noodles for a hot and tasty one-bowl meal. You can substitute regular paprika for the smoked paprika if you don't have it on hand. You can also skip chopping up the chicken thighs ahead of time and serve them whole if you wish. Makes 6 servings.

Ingredients to Freeze:

2–3 pounds boneless skinless chicken thighs
1 large onion, chopped
4 teaspoons smoked paprika
1 teaspoon salt
½ teaspoon pepper
1 teaspoon chicken bouillon, or 1 chicken bouillon cube

While Cooking:

8 ounces sour cream
2 Tablespoons all-purpose flour
Egg noodles

1. Cut the chicken into bite-size pieces. Place in a freezer bag. Add the onion, paprika, salt, pepper, and chicken bouillon to the bag. Squeeze out the air and seal the bag. Label it with the date and recipe name.
2. When you are ready to cook the dish, dump the contents of the freezer bag into your slow cooker. Cook on high for 3 hours.
3. At the 3-hour mark, mix the sour cream with the flour until combined. Stir the sour cream mixture into the slow cooker. Cook on low for 1 more hour.
4. Cook the egg noodles according to the package instructions. Serve the chicken paprika over the egg noodles.

 Slow Cooker Spicy Beef and Peppers

Serve this meal over cooked white rice. You can adjust the spice level of this dish by reducing the amount of black pepper and red pepper flakes

used. Makes 8 servings.

Ingredients to Freeze:

2–3 pounds beef stew meat
3 red, yellow, or orange bell peppers, sliced
1 onion, sliced
3 teaspoons beef bouillon, or 3 bouillon cubes
2 teaspoons minced garlic
2 teaspoons salt
1 teaspoon black pepper
¼ teaspoon red pepper flakes

While Cooking:

¼ cup cold water
2 Tablespoons cornstarch
Cooked white rice

1. Place beef, peppers, onion, bouillon, garlic, salt, pepper, and red pepper flakes in a freezer bag. Squeeze out all the air and seal. Label the bag with the date and recipe.
2. When ready to make the dish, dump the contents of the bag into the slow cooker. Cook on high heat for 3½ hours.
3. Mix the cornstarch and water. Pour into the slow cooker and stir to mix. Cover and cook on high for another 30 minutes or until the liquid has thickened.
4. Serve over cooked white rice.

Freezer meals are an economical way to feed yourself and your family. If you use reusable plastic or glass containers, it helps cut down on waste. And setting aside a couple each week will help save time and energy when planning your meals. Before you know it, you'll have a freezer stocked with healthy meal options for months to come. Happy freezing!

Resource

Frederick S. vom Saal and Laura N. Vandenberg, “Update on Health Effects of Bisphenol A: Overwhelming Evidence of Harm,” *Endocrinology* 162, no. 3 (2020): bqaa171, doi:10.1210/endocr/bqaa171.

[contents]

Health and Beauty

Elimination Diets

Mireille Blacke, RD, CD-N

Some of our favorite comfort foods simply don't love us back. Some of them may even lead to ongoing discomfort of our gastrointestinal (GI) systems. It can be frustrating and exhausting for most people to figure out the potential source(s) of their distress, particularly if food intake is involved. As a registered dietitian (RD), it's part of my job to counsel and educate patients and clients about nutrition and related conditions, and sometimes it is challenging on my end too. Back in the earlier days of my career, receiving a referral from a gastroenterologist to address the topic of elimination diets with a client was definitely daunting.

Basics of Elimination Diets

There are several reasons a person may be referred by a physician or choose to explore an elimination diet on their own, often when trying to identify trigger foods that cause digestive issues like gas, bloating, irregular bowel habits, and stomach pain. Based on an individual's own ongoing experiences and symptoms, a food allergy, intolerance, or sensitivity may be the source of your discomfort. The differences between these types of reactions to foods will be addressed later in this article, as they differ from one another but may overlap.

This article is not intended to replace direct medical advice. Because of our individual differences and the common difficulty of pinpointing specific

trigger foods, it's very important to first consult with your primary care provider or gastroenterologist before undertaking an elimination diet on your own. Attempting to do so entirely on your own may result in the masking of symptoms or forgoing treatment for underlying issues like celiac disease and inflammatory bowel disease (IBD). Furthermore, you could end up lacking key nutrients without appropriate medical guidance and monitoring.

The Top Nine Food Allergens and Trigger Foods

A basic elimination diet plan will typically remove at least one of the top nine foods most commonly associated with food intolerances, sensitivities, and allergies: milk, eggs, finned fish, peanuts, sesame, shellfish, soy, tree nuts, and wheat. (To see a full list of what to avoid with each allergen, please refer to the "Common Allergies" article by Food Allergy Research and Education as listed in the resources at the end of this article.)

Examples of foods in the top food allergen groups include the following:

Milk: Butter, cheese, cottage cheese, creamer (for example, "half and half"), ice cream, kefir, sour cream, yogurt, whey or dairy-based powders, and any packaged products made with dairy

Eggs: Eggs, baked goods, egg-based powders, and mayonnaise

Finned Fish: Anchovies, bass, haddock, pollack, salmon, sardines, swordfish, tilapia, trout, and tuna (fresh or canned)

Peanuts: Peanut butter, peanut flour, and peanut oil

Sesame: Sesame seeds, baked goods, and sushi

Shellfish: Clams, crabs, crawfish, lobster, mussels, oysters, prawns, scallops, and shrimp

Soy: Edamame, miso, soy milk, soy ice cream, soy oil, soy sauce, soy yogurt, tamari, tempeh, and tofu

Tree Nuts: Almonds, cashews, nut butters, nut milks, nut pastes/extracts, pecans, pine nuts, pistachios, and walnuts

Wheat: Breadcrumbs, bulgur, crackers, cereal, farro, flours, matzoh meal,

pasta, seitan, wheat-based bread, wheatgrass, and wheat germ oil

While not true food allergens, other foods and ingredients can cause discomfort as well, in the form of food intolerances and sensitivities.

- Alcohol
- Corn
- Gluten, a protein in wheat, rye, and barley
- Fructose, a sugar in some fruits and vegetables
- Nightshades, foods and spices containing alkaloids
- The flavor-enhancer monosodium glutamate (MSG)
- Sulfites, compounds found in beer, red wine, and other foods
- Histamines and certain amines, naturally occurring chemicals in foods like avocados, bananas, cheese, chocolate, and pineapples

Food Allergy vs. Intolerance vs. Sensitivity

It’s important to understand the difference between food allergies, intolerances, and sensitivities, as they are not the same. A food allergy is potentially life-threatening, occurring when your body overreacts to the proteins in specific foods. Allergic reactions to food may include anaphylaxis, hives, itchiness, rashes, skin irritation, and swelling. A food intolerance occurs when your body cannot properly break down a certain food or ingredient, causing GI issues like bloating, gas, irregular bowel patterns (diarrhea, constipation), stomach distention, and in some cases cold-like symptoms. A food sensitivity may be easily confused with an intolerance, though sensitivities are often due to an imbalance of GI/gut bacteria. Symptoms of food sensitivities may include GI issues noted with intolerance, as well as fatigue, joint or muscle pain, and brain fog.

If you’ve experienced any of these signs and symptoms or if you believe you may be impacted by one or more of the specific trigger foods leading to GI (or other bodily system) distress, an elimination diet might be a helpful

tool in addressing your medical concerns, and I encourage you to continue reading. I'm hopeful that some of the information in this article may apply to you and assist you on your journey to a renewed relationship with a variety of foods that is literally more comfortable and enriching.

Elimination diets, whether basic or more complicated (like the FODMAP plan) are not recommended for individuals who are underweight. It's also important to recognize that though elimination diets are not intended for weight loss, it's possible to lose weight during the process due to the various foods eliminated.

Basic Elimination Diet Phases

In terms of starting a basic elimination diet, it's likely that, in consulting with your primary healthcare provider or gastroenterologist, you'll be referred to an RD who specializes in GI issues and can help safely guide you through the process. You will review your current diet and symptoms in order to attempt to identify your possible trigger foods. It's likely that you will be advised to completely avoid those potential trigger foods for *at least* two weeks (during the elimination phase), during which you'll be provided with a meal plan to serve as a guide for what to eat (and not to eat), which can be adjusted according to your individual needs.

It usually takes time for a prescribed elimination diet to show results, and this will require patience. Your body needs enough time to respond once specific foods are removed from your diet. While most elimination phases are relatively short, for some individuals, the elimination phase may require a period of four to six weeks. Just as food triggers vary from person to person, medical practitioners may also have preferences for elimination diet phases. Based on your individual symptoms, your healthcare provider may suggest you eliminate one or more of the nine top allergens from your diet. In other cases, more limited meal plans that eliminate all primary allergens can be provided by an RD, but clearly *that much dietary restriction carries a higher risk of nutritional deficiency and should be conducted under medical supervision*.

Once the elimination phase is completed, the reintroduction phase may begin, during which one possible trigger food is added back into your diet at a time, slowly and methodically. Spacing out the food reintroductions by at least three days makes it easier to figure out what foods trigger what symptoms. As with the elimination phase, having patience and maintaining a slow and steady reintroduction is critical in correctly identifying your trigger foods. Depending on your level of detail-orientation, diligently keeping a food symptoms diary during this time can be extremely helpful and informative. In doing so, you'll log the foods you eat as well as what symptoms you're having and when. It's also encouraged to keep track of the moods you feel (such as anxiety), your sleep patterns, your stress levels, and anything else that seems relevant.

Individuality in Elimination Diets

Managing expectations with an elimination diet can be useful; expect that the foods to avoid on a basic elimination diet will be extremely specific and individualized. This makes sense because foods and compounds that trigger symptoms vary from person to person. Unfortunately, sometimes your trigger foods might be some of your favorite foods. Some clients may have symptoms that suggest they may want to start by avoiding lactose, the carbohydrate found in some dairy products, as "milk" is noted as the most common food intolerance. Other people may suspect that gluten, the protein in wheat, may be causing their symptoms. As noted on the list on page 121, the top nine allergen categories include a number of particular foods to avoid. For example, the milk category includes various dairy products, like butter, cheese, cottage cheese, creamer (for example, "half and half"), ice cream, kefir, sour cream, whey or dairy-based powders, yogurt, and many more dairy-based food products. In contrast, targeting finned fish would include anchovies, bass, haddock, pollack, salmon, sardines, swordfish, tilapia, trout, and tuna (fresh and canned). Regardless of which allergen category is selected, following any elimination diet will involve label reading, particularly when it comes to detecting certain allergens as "hidden

ingredients” that may be buried far down the ingredients lists in various food products.

The FODMAP Elimination Diet

The topic of elimination diets takes a more complicated leap with one acronym: FODMAP. I distinctly remember being a relatively new outpatient RD and receiving a physician’s referral to assist a patient with a “low-FODMAP elimination diet” for the first time. Frankly, I was intimidated. At the time, RDs were to present the relatively complex FODMAP information to patients in a much easier-to-digest manner, in dietary phases, to be discussed and monitored across several visits that could take a few months. Considering busy lifestyles and resistance to behavior change around food, it was challenging enough for the average patient to keep appointments to see an RD for one follow-up visit for less complex concerns; to expect follow-through with something requiring complicated information, time, and patience, I thought, was pushing it.

Looking back, it was clear I still had a lot to learn back then. Clients who were referred for FODMAP education or nutritional counseling were suffering with long-term conditions that were often diagnoses of exclusion, like irritable bowel syndrome (IBS). They were extremely motivated to not only learn about FODMAP meal planning but to keep returning for their follow-up visits. FODMAP was far more than your average elimination diet, and given patience and persistence, it seemed to bring relief to many patients.

Benefits of FODMAP

Though a low-FODMAP elimination diet is most often used to help people diagnosed with IBS, it may benefit individuals with small intestinal bacterial overgrowth (SIBO) and other similar conditions. FODMAP is an acronym for fermentable oligosaccharides, disaccharides, monosaccharides, and polyols, which are short-chain carbohydrates (sugars) that may be absorbed poorly by the small intestine, leading to chronic symptoms of GI

distress in some individuals. Evidence-based research has shown that minimizing FODMAPs in one's diet may alleviate GI symptoms. According to literature reports from IBS experts, limiting foods containing these particular sugars (i.e., incorporating a low-FODMAP diet) can reduce uncomfortable GI symptoms in roughly 85 percent of people with IBS.[20] If high-FODMAP foods are the root of your distress, traditional elimination diets that focus on eliminating the nine top allergens might make your symptoms worse, because in many cases you'll still be allowed certain high-FODMAP foods. In that case, I recommend working with an RD who is knowledgeable in IBS and the low-FODMAP diet and who can tailor it to your needs.

General FODMAP Categories

While the low- and high-FODMAP foods lists are extensive and may be accessed from sources in the resources section, the following are examples from each FODMAP category:

Fermentable Carbohydrates: These may be poorly absorbed and fermented by bacteria in the colon, which may lead to symptoms of GI distress, including those mentioned previously in this article. The following categories are considered fermentable and should be limited in a low-FODMAP diet.

Oligosaccharides: Wheat, rye, onions, garlic (fructans); beans, chickpeas, lentils, and soybeans (galactans)

Disaccharides: Milk products like soft cheeses, ice cream, and yogurt (lactose); table sugar (sucrose)

Monosaccharides (Fructose and Glucose): Honey, mango, and high-fructose corn syrup

And, last…

Polyols: Sugar alcohols (sorbitol, mannitol, maltitol, and xylitol), avocados, cauliflower, peaches, and plums

Some foods may fall into more than one FODMAP group, such as apples (fructose and polyols), asparagus (fructans, fructose, polyols), mushrooms

(fructans and polyols), and sweet corn (galactans and polyols).

Identifying Low- and High-FODMAP Foods

Available lists of high- and low-FODMAP foods are far more extensive and won't necessarily break foods down by FODMAP category, which may be easier to understand for most of us. More comprehensive FODMAP food lists can be accessed via trustworthy online sites (see the resources section), copious published books, or working with an RD.

For many people, it may be easier to refer to FODMAP foods categorized by "food groups," as organized below. High-FODMAP foods should be avoided, including but not limited to these:

Dairy-Based Foods: Ice cream, milk, and yogurt
Wheat-Based Foods: Bread, cereal, and crackers
Legumes: Beans and lentils
Certain Vegetables: Artichokes, asparagus, garlic, and onions
Certain Fruits: Apples, cherries, peaches, and pears

Low-FODMAP foods should make up your meals and snacks instead. Try some of these:

Non-Dairy: Almond milk, cashew milk, macadamia milk, rice milk
Certain Cheeses: Brie, cheddar, and feta
Certain Grains: Oats, quinoa, and rice
Proteins: Eggs and meat
Certain Vegetables: Cucumbers, eggplant, potatoes, tomatoes, and zucchini
Certain Fruits: Blueberries, grapes, oranges, pineapple, and strawberries

In 2023, sesame became the ninth major allergen to require mandatory labeling on packaged foods in the United States.

FODMAP Specifics

After a brief review of the foods included in a low-FODMAP elimination diet, it should become obvious that following this diet will entail ingesting some foods prominently placed on the basic elimination diets. If you've already completed a basic elimination diet under supervision of a healthcare provider, you may have identified a food allergen from that process (such as shellfish). Your particular FODMAP meal plan would then be individualized to remove this trigger food. Reactions to FODMAP foods are also amount-dependent, meaning that an individual's reaction to a high-FODMAP food may be contingent upon portion size and frequency of intake. In other words, you may experience no GI symptoms when you eat one serving of hummus (made with chickpeas) once per week, but if you eat a few servings daily, you may find that your GI symptoms could flare up. The same could be said for high-FODMAP fruits or vegetables.

As with basic elimination diets, adequate hydration remains important, but high-FODMAP beverages and fluids must be removed or limited as well. Water is the ideal beverage choice, whether it's plain or sparkling. For some people, carbonation is a problem, so this should be considered on an individual basis. Herbal teas are typically recommended, though some medical providers allow limited intake (one to three cups per day) of caffeinated teas and coffees, assuming only low-FODMAP dairy is added, if at all. However, caffeine may be a gastric irritant for some, so in most cases, it's avoided during the elimination phase, as is alcohol. Additional beverage options include non-dairy "milks" and low-FODMAP smoothies.

FODMAP Diet Stages

In general, the low-FODMAP elimination diet has three steps, similar to basic elimination diets. The first step is to stop eating high-FODMAP foods during the elimination period, which should last between two and six weeks. During this time, a reduction in GI symptoms should be noticed. The reintroduction phase follows, in order to test which foods are problematic. Every three days, you may add one high-FODMAP food back into your diet and monitor for the return of symptoms. You may decide to

avoid symptom-causing high-FODMAP foods for the long-term, once they are identified. Finally, once all high-FODMAP foods are reintroduced and monitored for potential symptoms, you can avoid or limit any offenders while returning to a more regular eating pattern.

Looking back, that's not so intimidating, right?

While it's normal for clients to be disappointed when they discover that their favorite foods don't agree with them and sometimes may need to be limited or removed from their regular food intake, this feeling is often outweighed by the fact that dietary changes they discover through elimination diets usually allow them to feel so much better. Despite the time and effort involved, for many individuals, the use of an elimination diet as prescribed by a professional can offer tremendous physical relief and also serve as an empowering and motivating tool for them to potentially seek out alternative comfort foods instead of those that may be distressing them.

Resources

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[contents]

Postpartum Herbs and Lore

Rachael Witt

After hours of labor and minutes of pushing, within seconds, I was sitting down holding a beautiful baby staring directly at me. Our cord of connection was still intact, soon to be cut by my partner, followed by a final push to release the placenta. I did not hemorrhage, but I did need a couple of sutures due to small vaginal tears. Overall, the birth was swift, and despite vomiting after every contraction, my body handled the labor fairly well. It was after leaving the birthing center with my newborn daughter that my postpartum journey began.

This rite of passage is like none other. And there are so many different ways it happens. Mothers far and wide can each tell their story, which varies with child, with circumstance, with life. What I share here are words and ways that supported me during my first forty days (and beyond) as a new mother, written from my experience as an herbalist and a complete novice to the postpartum passage, also known as the fourth trimester.

The fourth trimester refers to the first twelve weeks that the baby is adjusting to life outside the womb and the mother is adjusting to her role as a parent. It's just as important for mother and baby to stay connected during this time as it was during pregnancy.

Down-There Care

I had a vaginal birth. Hence, this area of care was truly important entering postpartum. I wanted to prevent any infection while expediting the healing of my vaginal tears. Due to the downward pushing pressure, it was also important for me to support my pelvic floor from prolapse and further discomfort associated with elimination. My biggest takeaway here is to never underestimate the power of clean water. From drinking water to stay hydrated, to using it in peri bottles to rinse after elimination, to applying frozen wet washcloths and pads to ice down there, water is pure. Water heals. Water is life.

Yet the inflammation and pain resulting from torn tissues and muscle contractions may need more support in order for the postpartum mother to rest easy. That's where the ancient, healing power of herbs comes in.

Herbal Sitz Baths

Sitz baths are simple, warming, and cleansing. They allow the mother a moment by themselves. Herbs that I combined for pain relief and soothing inflammation included ginger, chamomile, rose petals, yarrow, and witch hazel. Prepare a sitz bath by steeping a combination of herbs in hot water as you would a tea. After 7–10 minutes, strain the herbs from the water and add the herbal infused water to a shallow bath. Sit or lie down in the bath for 10–15 minutes to soothe perineal discomfort.

Herbal Sitz Spritzers

I wanted more relief in between herbal sitz baths, so I made myself a "sitz spritzer" to spray after using my peri bottle to cleanse down there. The spritzer is a helpful aid for those who do not like to sit in baths or do not have access to a bath. Herbs that make for a helpful sitz are those that are astringent to help tighten and tone tissues, antiseptics to prevent any unwanted bacteria, and vulnerary herbs to help heal and restore.

Mother Lover Sitz Spritz

These herbs and menstruum make for a soothing sitz spray that supports perineal repair.

You will need:

2 Tablespoons witch hazel
1 Tablespoon lavender hydrosol
1 teaspoon calendula infused oil
1 teaspoon comfrey infused oil
1 teaspoon yarrow infused oil
10–20 drops lavender essential oil

This combination will fill a 2-ounce glass spray bottle. Keep the blend in a cool place out of direct light. I liked to store mine in the refrigerator to accentuate the cooling temperature and further preserve its shelf life. Outside of the fridge, the spritzer will be most potent for up to 1 year.

Herbs for Easy Elimination

One of the topics that I think is vital to health and yet so often shoo-shooed by our culture is that of elimination. Specifically speaking, our bowel movements and urination—the excretion of toxins, the output of the digestive system, the ends to the beginnings.

Leading up to my giving birth, this subject matter only came up unexpectedly during an appointment with my hairdresser. She spoke about her experience of needing to eliminate during her labor and how the bearing down sensation to birth her child urged her to eliminate anything (and everything) down there. It’s real. Bowel movements happen during labor. And post labor, the thought of pushing anything out again sounds painful! Hence, stool softeners can help. Strong laxatives can be too aggressive and hard on the digestive system, yet adding herbs to your diet can be a gentle way to support your elimination. I added psyllium husks, chia seeds, and plantain seeds to any grains or smoothies to help soften stools.

A note for those taking oral iron supplements: Constipation is a common

side effect. To help rebuild iron levels and encourage healthy bowel movements, combine organic fruit juices such as pear, black currant, and apple to help promote digestive gusto and flow.

Breastfeeding

The mother’s body is magic. The ability to produce milk is a wonder. And the relationship between the mother, baby, and milk is a roller coaster.

Nobody told me how difficult the breastfeeding journey would be. In my naivety, I thought that my baby would naturally feed from my breasts and that my milk ducts would produce just the right amount. Little did I know.

The day after my daughter was born, I started to produce colostrum, the “liquid gold. I was proud to know that I was able to provide nourishment for my baby. At this point, I also began my herbal regime of incorporating a galactagogue tea. By day five, my breasts were so engorged it was painful (and quite astonishing to see them so incredibly large!). The milk was being produced at a higher rate than my baby was able to keep up with. I tried a manual breast pump to help express, but it wasn’t enough. This was the beginning of a very troublesome course in learning about milk supply, my baby’s ability to latch, and my patience throughout it all.

One of my biggest nursing allies was an herbal galactagogue blend. Galactagogues are herbs that promote lactation and increase milk flow. Some of these herbs, such as garlic, fennel, and turmeric, can be incorporated into a nursing-friendly diet, while others make for an effective tincture.

About three weeks postpartum, with milk production in full swing, I felt achiness from my left breast. By the evening, I felt extremely tired and my whole body began to ache. Something was not right. I took a bath and everything became worse—extreme breast tenderness, swollen milk ducts, fatigue, achy bones, and heat. It was clear that my milk duct was inflamed and perhaps infected. I ran to my apothecary and quickly combined herbs to fight infection, cleanse the lymphatic system (including the milk ducts), and calm my mind and body. I took 3 dropperfuls of tincture every hour, while

attempting to sleep and further feed my baby. Later in the night, my body began to sweat and break a fever. I continued the Happy Ducts herbal formula (on the next page), but reduced the frequency, and used cold cabbage leaves as a compress on my breast to soothe the inflammation.

The mastitis reduced and my milk production slowed, yet I continued with the Happy Ducts Tincture and the Galactagogue Tincture for one week before my body rebalanced the adequate milk supply.

To prevent another episode of mastitis, I took sunflower lecithin capsules daily. Sunflower lecithin helps prevent fat molecules from clumping together and clogging the milk ducts. It is also said to make milk thinner, which helps it flow.

Galactagogue Tincture

This alcohol-based tincture helps support lactation, encouraging milk flow, while also calming the nervous system.

You will need:

2 parts each fenugreek, fennel, and blessed thistle tinctures

1 part each milky oats, motherwort, and marshmallow tinctures

½ part ginger root tincture

Combine the herbal tinctures together. Take 1–3 dropperfuls 2–4 times a day (1 dropperful equates to about 30 drops from a dropper, or 1mL). The amount and frequency of use depend on the sluggishness of milk flow.

Note: This formula can also be used with dried herbs as a tea blend.

Happy Ducts Tincture

This alcohol-based tincture helps support milk ducts (clogged, mastitis, etc.) and reduces stress.

You will need:

2 parts each usnea, propolis, and yarrow tinctures

1 part each red root, echinacea, and boneset tinctures

½ part each calendula and ashwagandha tinctures

Combine the herbal tinctures together. For an acute infection, take 3 dropperfuls every 1–3 hours (1 dropperful equates to about 30 drops from a dropper, or 1mL). For recovery, take 1–3 dropperfuls 2–4 times per day. Since herbs in this formula are strong antiseptics, I recommend not exceeding 2 weeks of use.

Emotional Well-Being

The drastic shifts of hormones during pregnancy, birth, and postpartum are a book in and of itself. Altogether, these fluctuations are most notable in the physical changes of the mother's body and the emotional shifts throughout each stage. During labor, the mother experiences high levels of endorphins, oxytocin, and adrenaline. These help the mother cope with pain, handle stress, and heighten the intimate connection with baby. After delivery, these "high" hormones reduce. Over the next few months, the mother's hormones begin to shift again as the body restructures to its "new normal."

So now we have a body that just morphed and is healing, hormones that are changing, and the need to care for this delicate human being. How does one maintain emotional balance?

Here's when having a postpartum plan is extremely helpful. Here's when we call on not only our family and friends, but also our higher guides, soul selves, plant allies, therapists, and doctors. We need it all. Most importantly, we need to have a safe place to express our emotions and understand what is true for ourselves and our situation.

I have witnessed many new mothers experiencing such emotional hardships but not admitting their unhappiness (I mean, hello, there's a precious new baby!). Yet it's the overwhelming emotions of anxiety, grief, and depression that can have a dramatic toll on the mother and baby if not addressed. There is a growing awareness in the medical world about postpartum depression and anxiety. It's my belief that being honest with your care providers can lead to the proper support. Doctors have the ability to check iron levels, vitamins B_{12} and D, and thyroid levels, to make sure everything is within a balanced range. Counselors can provide social and

emotional support. And there may be some herbal allies to help naturally calm and support the adrenals and nervous system. Some of my favorite herbs that help me stay calm and balanced that are also breastfeeding-safe include skullcap, motherwort, holy basil, chamomile, lavender, lemon balm, ashwagandha, Saint John's wort, blue vervain, and linden.

Nourishment

To feed and nourish the mother is to feed and nourish the baby. Above all else, nourish. To nourish is to heal. To nourish is to thrive. To nourish is to mother. Nourishment is at the basis of all.

My herbal journey is rooted in the wise woman tradition, whereby nourishing herbs are the foundation of everyday nutrition. And food is medicine. If this wasn't already stressed throughout pregnancy, it's not too late. The baby is still dependent on the mother for nourishment (especially when breastfeeding), and so it is important for the mother to be nourished (doubly so).

After the birthing experience, the mother's body is depleted. It's important to replenish and rebuild through rest, getting support, and eating a nutrient-dense diet. To support milk production and tonify blood, I focused on a diet rich in protein, iron, and healthy fats. I incorporated lean meats, red meat, beans and other legumes, dairy, and dark greens.

In addition to eating nourishing foods, using herbal infusions can help restore the body with vitamins and minerals.

Nutrient-dense herbs that I recommend include nettle, fenugreek, red raspberry, red clover, milky oats, hawthorn flower, and linden. I would drink 1 quart of an infusion over the course of 1–2 days. To make an herbal infusion, place 1 ounce of dried herb in a quart jar. Fill the jar to the top with boiling water. Stir the herb to allow for air bubbles to escape. Secure the lid on top of the jar. Infuse for 4 hours or overnight. Strain the herb out by pouring the infusion over a strainer into another jar or bowl. Drink at least 1 cup of infusion per day. Store it in the refrigerator for up to 3 days.

Congee

One of my favorite comforting and simple meals is a bowl of rice porridge called congee. Congee can be made sweet or savory. From using bone broth as the base to adding seaweed, miso, ghee, or goji berries, congee is easily digestible and nourishes a hungry mother.

You will need:

1 cup rice (white, brown, basmati)

10 cups water

Combine the rice and water in a slow cooker and cook on low for 6–8 hours. On a stovetop, cook this combination on a low flame for about 4–6 hours. The finished porridge will be thick or thin based on the amount of water initially added.

Mama Love Tea

To add flavor and a combination of herbs to support the mother during postpartum, this herbal tea is nourishing and calming and also encourages milk production.

You will need:

3 parts each nettle, dandelion leaf, hawthorn flower, and alfalfa leaf

2 parts each red raspberry leaf, moringa leaf, and red clover

1 part each rose petals and fennel seed

Combine the ingredients. To brew, add 1 tablespoon of the tea to a cup of hot water. Steep for 10–15 minutes, based on desired strength of flavor. Drink 1–3 times per day as desired. Store it in the refrigerator for up to 3 days.

Loving Acceptance

Further nourishment for the mother is love—love and acceptance. So often the celebration and focus go to the new baby and the mother is overlooked. It’s important for both mother and baby to get attention and assistance. It’s

also important for the mother to have time, space, and acceptance for this life transition. The ability to shape-shift, transform, and create life is not to be ignored. There is so much power in the mother. This needs to be encouraged and revered. Building a practice of honoring and accepting motherhood will help heal and empower oneself, the baby, the family, and the community at large. After all, loving acceptance is nourishment of the mother.

[contents]

Gardening as Medicine

Teresa Peterson

Many of us have probably heard the phrase “food as medicine,” or at least attempted to live by expressions of health or to overcome sickness by eating an abundance of fruits and vegetables. There’s been several catchphrases from the community health field to encourage eating healthy, including “5 A Day” and “Eat Green” as modern examples. Many of us might remember “An apple a day keeps the doctor away,” a pared-down Welsh phrase from the 1800s. Even earlier, Greek physician and philosopher Hippocrates is said to have coined the phrase “Let food be thy medicine and medicine be thy food.”

More recently, “food as medicine” has become a popular idiom in Indian country with the advent of the food sovereignty movement—the reclamation of traditional foods and being able to feed oneself. This movement proved to be critical during the COVID-19 pandemic and the resulting broken-down food systems. Indigenous families across Turtle Island started home gardens, organizations turned to distributing food, and entrepreneurs made available medicinal teas and remedies to boost immune systems to fight against the spread of the pandemic. The food sovereignty movement works to reclaim the traditional foods that maintained health across Indigenous communities prior to colonialism. It also calls into question the systems that rely heavily on corporate agriculture, mass production, carbon-heavy transportation, and the resulting extractive measures that harm life and Mother Earth. How do we manage to address all these systems and nurture health and wellness for

ourselves, families, and communities? Growing and foraging food can be, no matter the size of your garden or the amount of wild foods foraged, a significant step in accessing healthy foods and supporting the overall health and well-being of ourselves and nature.

Gardening as Medicine

Simply eating high-quality foods does support our health. However, modern medicine is teaching us that nutrient-dense foods not only support our immune systems, but they also impact our gut health, and a healthy gut keeps us emotionally healthy as well. In fact, Western science is making the connection and noting the interrelatedness between the body and mind. In the Dakota language, there is a concept called *wicozani*, which in essence means health and well-being. Wicozani encompasses the body, mind, and spirit, recognizing the interdependency of physical, mental, and spiritual health.[21]

There are many avenues to accessing locally grown and healthy foods, including developing your own garden space, sharing a community-based garden, purchasing a community-supported agriculture (CSA) subscription, visiting a local farmers market, or simply growing a tomato plant on the patio deck. Sustainable access to food in harmony with nature can be done through embracing gardening as medicine. Gardening isn't just about the food—although that's a big part of it. There's so much more to gain from cultivating or foraging foods that support a healthy mind, regulate emotions, and can even nurture a sense of spiritual awe and wonderment—which I call communing with Creator.

Physical Health

I grew up on a small hog farm where our family grew, raised, hunted, fished, and foraged for most of the food we ate. We worked plenty hard on the farm, and we were well nourished by all that our family produced and preserved. However, it wasn't until I had my first son that I returned to

growing food. I can still see my then-four-year-old's whole body smiling as the pumpkins he grew came to fruition. We have expanded our gardening since that small pumpkin patch years ago to include a large and diverse selection of garden produce for fresh eating and preservation. We plant the typical tomatoes, peppers, onions, green beans, potatoes, and carrots that we tenderly care for, harvest, and preserve to enjoy throughout the year. All of these we grow chemical-free in rotation in our garden space—offering nutrition-filled foods for eating and sharing. We also grow a variety of heirloom beans, squash, and corn from seeds we maintain. I think of heirlooms as Creator intended, high in nutrition and flavor.

We continually try on green practices: for example, laying grass clippings (make sure you don't use chemicals on your lawn) over recycled newspaper to hold in moisture and decrease weeds. More recently, we tried growing cover crops to decrease weeds, improve soil composition, and hold in moisture. In the late fall we planted a mix of winter rye and hairy vetch in most of our garden space, and in the spring an oat and radish mix in additional areas. We then tilled the cover crops in strips where we later planted, which offered "green manure" for increasing nutrients (e.g., nitrogen) in the soil. During the late spring and into early fall, we also get plenty of physical exercise keeping up with garden chores. Standing on one foot, strategically leaning in, and carefully plucking ripe blackberries from a very thorny patch improves strength, balance, and agility. Shoveling dirt in search of potatoes will work up a sweat, as well as bending over numerous times in search of strawberries. There is always work to be done in the garden, providing opportunities for physical exercise.

In addition to gaining physical health from gathering and eating fresh, high-quality produce during the season, we preserve fruits, several berries, and a litany of vegetables. We also can spaghetti sauce, pizza sauce, tomato soup, salsa, apple sauce, jams and jellies, and pickles to last throughout the year. A constant line at the dining table throughout the seasons is "We sure eat good!" The flavor of our homegrown food is just one reason we keep up with our gardening.

Mental Health

The garden has been my best therapist. It has been a place for me to work through my own everyday problems, including those that aren't mine to resolve. Part of my work has always included some type of writing, yet it is quite easy to get stuck, uncertain how to transition, convey, or solve an issue. The physical and sometimes mundane task of pulling weeds or picking rows of dried beans brings on sweat and dirt, but it nonetheless surfaces what I was trying so hard to extract from my brain. The garden is also a place for me to reflect on or bring concerns that are too big for me to solve. Crouching on the ground, looking up at the blue sky or being eye level with plants, or seeing the world up close alongside a bee or other insects gives me the perspective I need to let go of stress and undue concern. Getting out of living in our heads, moving our bodies, and connecting with nature can help us release tension and anxiety, ushering in peace and a balanced outlook.

Spiritual Health

The garden serves as a sanctuary for me—it is a space where I bring prayers, am filled with wonderment, and am reminded that we are all relatives. As a gardener, I notice the subtle changes that transition from one season to the next. There's an awakening in spring, bringing new life. Seeding and planting require faith as we practice patterned traditions in what, how, and why we sow. Being outside, gaining fresh air, and especially feeling bare feet on the ground give us grounding—a sort of physical meditation that connects us to our bodies and brings us into the present. Long, hot summer days do require hard work, a reciprocal mindset, and practicing resourcefulness and patience before we receive the gifts of our labor. However, remember that gardening can bring us wicozani even when the fruits remain unripe.

Abundance

When people ask me about my gardening practices, I often simply reply, “We grow food to eat.” However, I should include that we also forage food as well. Our space includes maple trees for tapping sap to make into syrup, as well as wild grapes, plums, and gooseberries to make into jams and even a pie. We gather apples and pears from the trees and pick cultivated strawberries, raspberries, blackberries, aronias, Indian corn, popcorn, potatoes, peppers, tomatoes, onions, garlic, squashes, and flowers for the pollinators.

However, one of the primary crops we grow is beans. It all started when a neighbor gifted me a bag of unshelled dried beans. I had not thought of growing dried beans yet found the shelling meditative. Our family has always grown green beans, but hard dried beans were a complete game changer. Before I knew what happened, I was growing over a dozen varieties of heirloom beans. Many were gifted to me; some I purchased through catalogues specializing in organics and heirlooms, which I continued to seed-save during each harvest. I enjoy swapping and sharing bean seeds as well. I recently decided to scale back on the number of varieties while reflecting on my mantra “We grow food to eat” by selecting the top eight kinds of beans we most frequently eat.

Medicine Garden

I can’t imagine my life without gardening. However, as I aged and our household decreased from five to two, I realized we didn’t need to grow as many fruits and vegetables; thus, downsizing the garden space was imperative. However, I didn’t want to just abandon the space for weeds to take over. I decided one particular corner of the garden would be dedicated to healing plants. It started the year a friend introduced aronia berries to me. They were a consolation to wanting to grow blueberries, which require lighter acidic soil. The aronia plants are thriving in my heavy, clay-laden soil. When ripe, the dark purple berries, also called chokeberries, remind me of a sweeter version of chokecherries, astringent but lovely in muffins

and pancakes. Considered a superfood, aronias are high in antioxidants, fiber, vitamin C, and manganese. Several studies have shown that the berries are linked to decreased inflammation and reduced bacteria and support reduced cell growth of colon cancer.[22] Late summer, I gather an abundance, freezing a gallon bag full to bake with or simply add to a breakfast smoothie.

The space is also dedicated to three types of mint—apple, spearmint, and peppermint. Mint is commonly made into a tea, one that I find really refreshing served over ice on a hot summer day. Mint is often used to treat indigestion, nausea, or bloating but has many other healing properties. High in vitamins C, B, and A, potassium, iron, and manganese, mints can support overall health. In addition to it being a breath freshener, several studies indicate other health benefits of mints, including antioxidants, which reduce diseases; anti-androgen, which helps with hormone imbalances; polyphenols, which can support improved memory; and menthol, which can address congestion.[23]

Lemon balm, *Melissa officinalis*, is a member of the mint family. Its antimicrobial, anti-inflammatory, and antioxidant properties may support sleep and reduce anxiety, pain, and indigestion. The lemon aroma leaves can be used fresh or dried to make a tea, sipped warm or served over ice. Lemon balm can also be used in cooking and baking. Think fish, poultry, butters, soups, and salads. Pests and animals typically are deterred from lemon balm due to its high concentration in citronellal. Consider carrying some in your pockets or crushing the leaves to release the oils to discourage mosquitoes.

While building out the medicine garden, I continued to contemplate our soil. I considered what indigenous plants inhabited the Mni Sota prairie. For example, a few years ago, our tribe's environmental offices provided prairie sage plugs, and so I planted an abundance of them. They have grown and spread and are easily managed to remain in a dedicated space. Sage, or in the Dakota language, *pejiȟota*, which translates to "gray medicine," is one of our sacred medicines. When dried and lit with fire, the smoke or smudge is used to cleanse our bodies, hearts, and minds. Some research affirms that

sage does in fact clean airborne bacteria and reduces anxiety and insomnia.[24] The field of botany shares that sage is antimicrobial and antibacterial and can be made into teas and tinctures to support health. Burning sage can also deter mosquitoes.

Since sage did so well in the prairie soils, I felt convinced to restore prairie-friendly plants. We worked with Morning Sky Greenery in Morris, Minnesota, to build out the space with medicinal plants. We filled it with Indian grass, sideoats grama, wild bergamot, yarrow, leadplant, wild strawberry, prairie onion, and coneflower.

Indian grass, being one of the original prairie grasses, has long roots and withstands periods of drought and flooding. In addition to it being aesthetically pleasing, standing tall with flowering stems that change color going into fall, its roots were traditionally used by Native Americans to treat wounds. Sideoats grama, too, are drought tolerant and provide a host site for several butterfly and moth larvae.

Wild bergamot, commonly known as bee balm, is a wonderful pollinator plant with its purple-pink flowers. Part of the mint family, it smells minty and a bit like oregano. And like other mints, the flowers and leaves can be made into a tea to address headaches, cold symptoms, and nausea or abdominal pain.

The yellow-colored flowers of the yarrow, which also come in white and pink, grow in a flat-topped shape above fernlike leaves. Yarrow has several medicinal purposes: It can be used to treat wounds or burns; made into a tea to treat colds, fever, and a range of digestive issues; and used to reduce inflammation. The leaves and flowers can be made into a tincture or tea to treat many conditions, including bleeding, menstrual cramps, and sleep troubles.[25]

The leadplant, *Amorpha canescens*, is considered a legume and does well with drought conditions. It is popular among many species of pollinators. Making a salve from the plant may aid in treating eczema and psoriasis. A tea can be made from the leaves to support lungs for cough or congestion.

Fragaria virginiana, or wild strawberry, produces much smaller berries than the hybrid strawberries grown on the other side of my garden. Yet the

petite berries are oh so delicious, fragrant, and sweet, still providing vitamins A, B, C, and E and offering protein, fiber, and calcium.

The prairie onion, or *Allium stellatum*, plants added to my healing garden have not yet produced their star-bursting white, pink, and lavender blooms. I needed to clear some of the sage that was competing but also learned that patience is required, as it can take a few years before they begin to flower. Stronger than garden-variety onions, the prairie onion's bulbs, leaves, and flowers can be eaten.

Echinacea angustifolia, narrow purple coneflower, is a drought-tolerant prairie flower. A pollinator-loving plant, the coneflower is visited by many insects, including the Minnesota rusty-patched bumblebee that is on the endangered list. A tincture made from the root boosts the immune system, wards off colds and flu, and is also used to reduce inflammation.

The anise hyssop is an attractive plant with lavender-colored flower stalks. I have only used the leaves in making tea; however, the licorice-flavored leaves can also be made into jelly.

My intention in developing this unused garden space into a perennial healing garden was to downsize the work and produce of the annual gardening. However, it does still require ongoing maintenance. For example, the mint plants can easily overtake the space with their aggressive runners, and mulch will continue to be needed, as well as weeding. The restoration of prairie plants supports land restoration, improving soil and providing pollinators with food, but also serves as a medicine cabinet for our family for years to come.

Conclusion

Gardening as medicine is not necessarily a new practice but perhaps a return to something. For example, through subsistence living, where basic needs are met through limited technology, including the traditions found in hunting, foraging, and small-scale farming, there is an understanding that the plants all around us can offer the nutrition and remedies to our most common ailments. The simplicity in this type of living provides a

connection to land, growing and harvesting to meet basic needs, and sharing and living locally with family and community. While this style is perhaps not accessible or desirable for various reasons, we can still manage to reach some level through gardening practices. When we grow and gather our own foods, we cannot help but gain a relationship with the lands. Growing, foraging, harvesting, and preserving to provide foods for yourself and your family can be done at a level that is sustainable and attainable, depending on your situation. There are numerous opportunities to share and learn with local friends and family simply by tending to a small garden—seed swapping, trading produce, group harvesting and preserving the abundance, and gathering around dining tables to enjoy meals and exchange knowledge through storytelling. All these gardening traditions and practices are good medicine.

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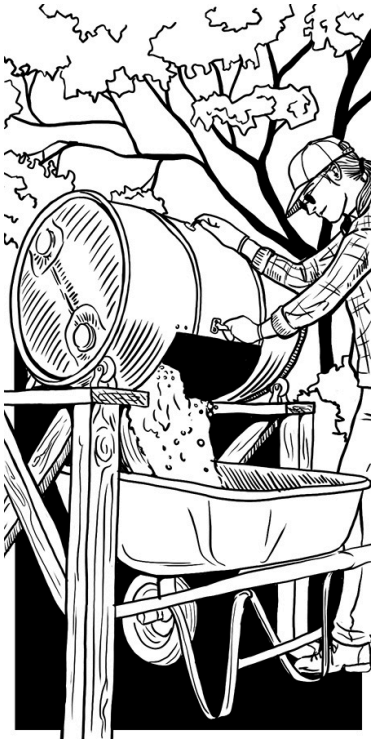
[contents]

DIY and Crafts

How to Make a Compost Tumbler

Laurel Woodward

If you garden, you probably already practice composting. Composting is the process of recycling organic matter like kitchen scraps and yard waste by saving the debris in a place where microorganisms will transform it into a dark, crumbly, earthy-smelling garden amendment. Compost is loaded with nutrients to nurture growing plants. In fact, gardeners often refer to compost as “black gold” because when it is made from a mix of kitchen scraps and yard clippings, it is the ideal amendment for a vegetable garden.



Read on to learn more about the benefits of compost and how to make a compost tumbler from a barrel and a few two-by-fours.

Good for Your Soil, Good for the Earth

Adding compost to your soil is one of the best ways to build its structure. Compost will fix most problem soils. Add compost to soil that is too sandy and the organic material will help hold the sand particles together to allow water retention. Add compost to clay soil and the particles make spaces to allow for better water and oxygen flow.

Compost feeds the soil biota, the bacteria, fungi, and all the micro- and macroorganisms that make up the soil ecosystems. When these tiny decomposers are fed, they multiply and work better to break down materials

into valuable life-sustaining nutrients that are then added back into the soil. Compost piles create the right conditions for these decomposers to work faster as they break larger compounds into basics like nitrogen, phosphorus, and calcium—important minerals plants need to thrive.

Composting is also good for the planet. In fact, composting is one of the easiest things you can do to fight climate change. When you embrace composting, you take on a sustainable practice that lowers your carbon footprint and reduces greenhouse emissions. Shockingly, in the United States, food waste makes up 24 percent of what we are putting into our landfills, and it is this food waste that is responsible for roughly 58 percent of the landfill's methane emissions.[26] When food rots in a landfill, because there is a lack of oxygen, the process changes. In the landfill, only the bacteria that can survive without oxygen are working to convert the waste, and this anaerobic digestion results in methane. According to the EPA, in 2023 the greenhouse gas emissions created by food waste sent to local landfills were equal to the emissions of more than 50 million gas-powered vehicles.[27] When you compost, the carbon is locked in the soil and the methane released into the atmosphere is reduced by 86 percent.[28]

Building Your Compost

Keep a small bucket with a lid in your kitchen. During meal prep, toss all your fruit and vegetable scraps into the bucket instead of throwing them out. Peel off the produce stickers, which should not be composted. Save up your spent coffee grounds and tea bags. They are a good source of nitrogen. Toss in your eggshells. They are a good source of calcium. When the bucket is full, add it to your outdoor compost.

Rake up fallen leaves, which are full of nutrients that quickly break down to provide a source of carbon for your compost. Instead of throwing out dirty paper and cardboard, add it to your compost pile to help balance the pH and add carbon.

Good compost is made of three parts browns, which are rich in carbon,

and one part greens, which are rich in nitrogen. Browns are made up of leaves, wood chips, sawdust, cardboard, paper, eggshells, cotton, and wool, as well as hay and straw. Greens include kitchen scraps; bread and grains; coffee grounds; grass clippings; and chicken, rabbit, cow, and horse manures.

Managing a Compost Pile

Composting materials should be added in layers: first a layer of browns, topped with a layer of greens, topped with a layer of browns. Then turn the mixture to add oxygen. If your pile has too much brown material, the pile will dry out and decomposition will stall. Add water and a layer of greens, then stir or turn the pile. If your pile has too many greens, your pile will become sludgy and start to smell as the decomposition slows. To fix, add more browns and stir or turn to increase oxygen.

Water your compost to keep it healthy. The microbe population needs moisture to do its work. If your compost dries out, decomposition stops. When you are watering, don’t forget to water your compost. Water it lightly. Compost should be damp, not soggy.

If you are worried that a compost pile might stink or attract vermin, you might consider using a compost tumbler instead of building a pile. The lidded barrel locks in kitchen scraps so that you may recycle your food waste while keeping critters out. The wheels allow for easy rotation, an action that introduces oxygen to aerate the rotting material. This keeps it from smelling as it feeds the microorganisms, boosting their ability to break down the materials and speeding the decomposition process.

DIY Compost Tumbler Instructions

A compost tumbler is a sealed container that can be rotated. This simple design transforms a plastic barrel into a composter. You will want to use a barrel made of food-grade plastic that has a tight-fitting lid.[29] Barrels and drums are available new from manufacturers such as Uline, but I found

used barrels made of blue high-density polyethylene (HDPE) locally for $10 each. You can tell what a barrel is made of by its recycle code.[30] Check with your local beverage manufacturers, car washes, and hardware stores to see if they have any they are trying to get rid of. Ask what the barrels were used for and confirm the material is food-safe.

If you find a good deal, you might want to buy two or three. Composting happens in stages over the year. If you have more than one barrel, you can stop adding new material when one is full and instead move on to a second so that the compost in the original barrel may completely decompose.

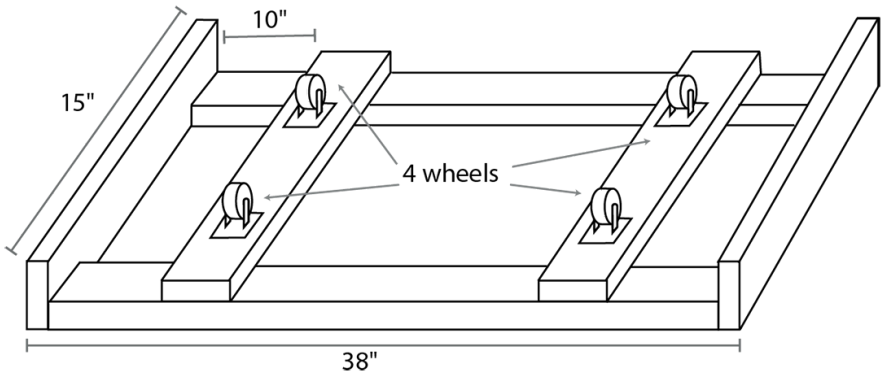
Tools you will need:

- Measuring tape
- Permanent marker
- Screwdriver
- Adjustable wrench
- Drill with ½-inch bit
- Jigsaw
- Pliers
- Wire cutters

For the base, you will need:

- 2 two-by-fours cut to 38 inches
- 4 two-by-fours cut to 15 inches
- 4 non-pivoting wheels
- Exterior screws

Lay out the two 38-inch boards and two of the 15-inch boards to create a rectangle. Screw them together. Next, place the two remaining 15-inch boards on the top of the rectangle about 10 inches from the edge. (The exact measurements will be determined by the size and shape of your barrel.) Screw the remaining boards into place and then mark where you are going to place each wheel. Mount the wheels and test them out by placing your tumbler on the base and giving it a spin.



For the composter barrel, you will need:

50- or 55-gallon food-grade plastic barrel with a lid

Section of wire mesh or screen

Wire

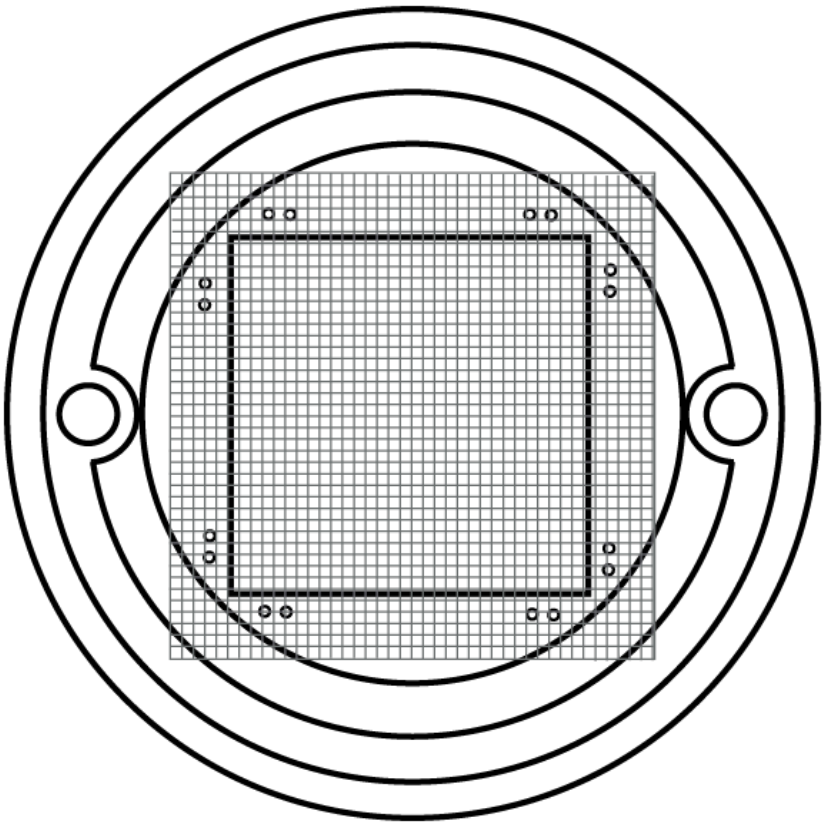
2 hinges

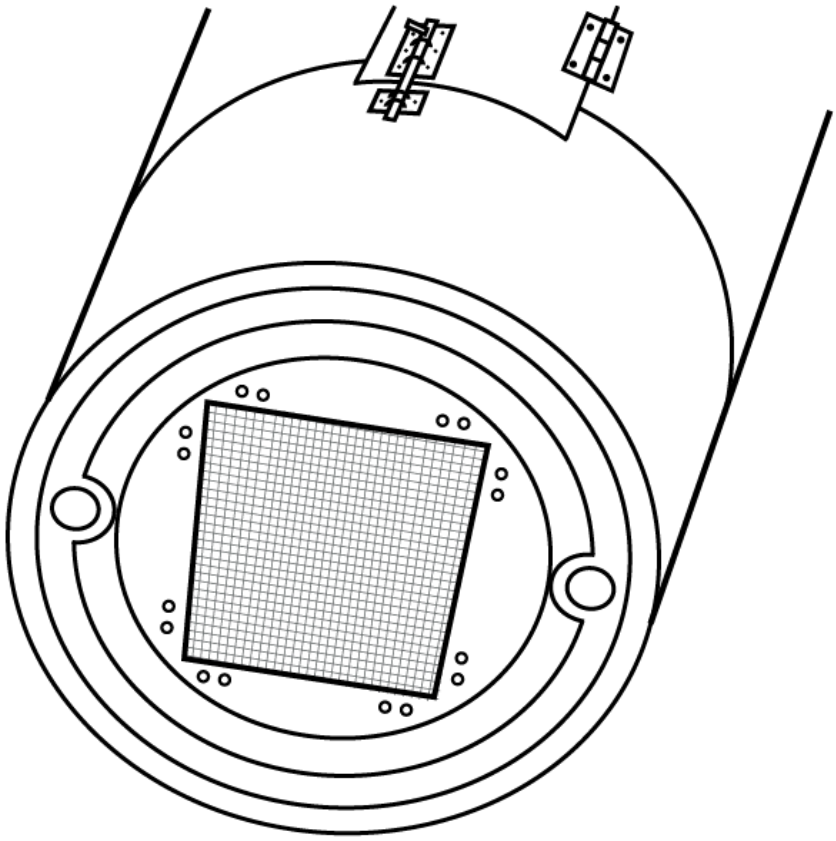
2 3-inch sliding bolt locks.

3-inch PVC pipe

Stainless steel nuts and bolts

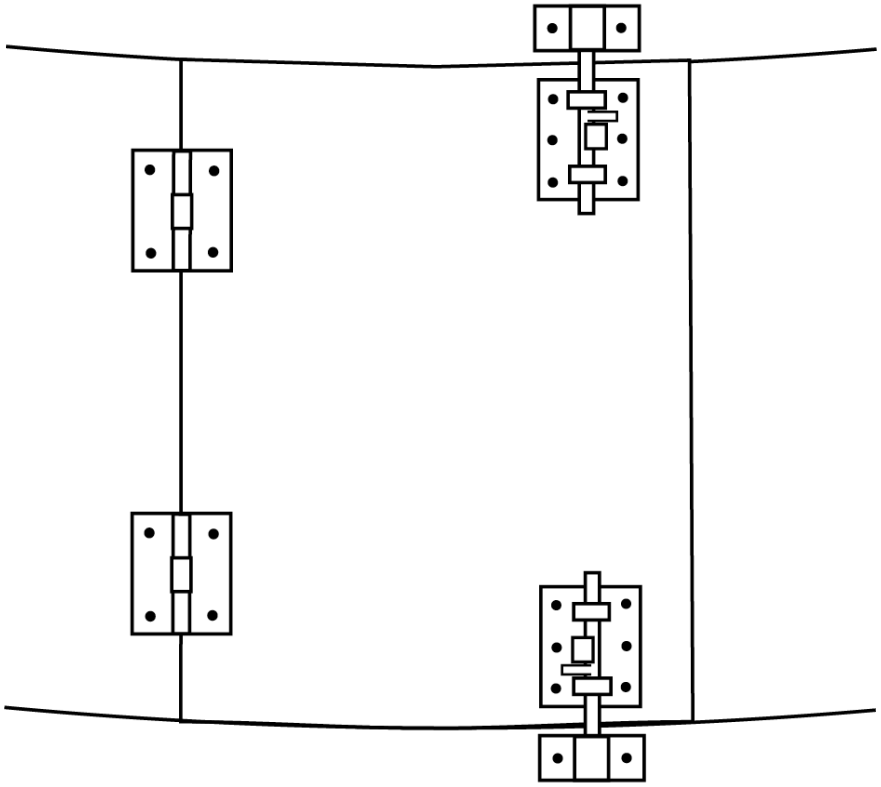
We are going to begin by cutting a hole in the lid and covering it with wire mesh. This will help increase airflow. Draw a square in the middle of the lid of the barrel and drill holes at each corner. Insert the blade of the jigsaw into a corner and cut through the plastic to make a square. When you have removed the plastic, take the drill and drill two holes 1-inch apart on each side of each corner. Cut the mesh so that it covers the square and overlaps 1–2 inches. Lay the lid so that the inside is facing up, then lay your mesh over the hole. Lace the wire through the mesh and push each end through the first set of holes. Use your pliers to grip the wire and wind the ends tightly on the other side of the lid, securing the mesh in place. Lace the wire at each corner until the mesh is bound to the lid.





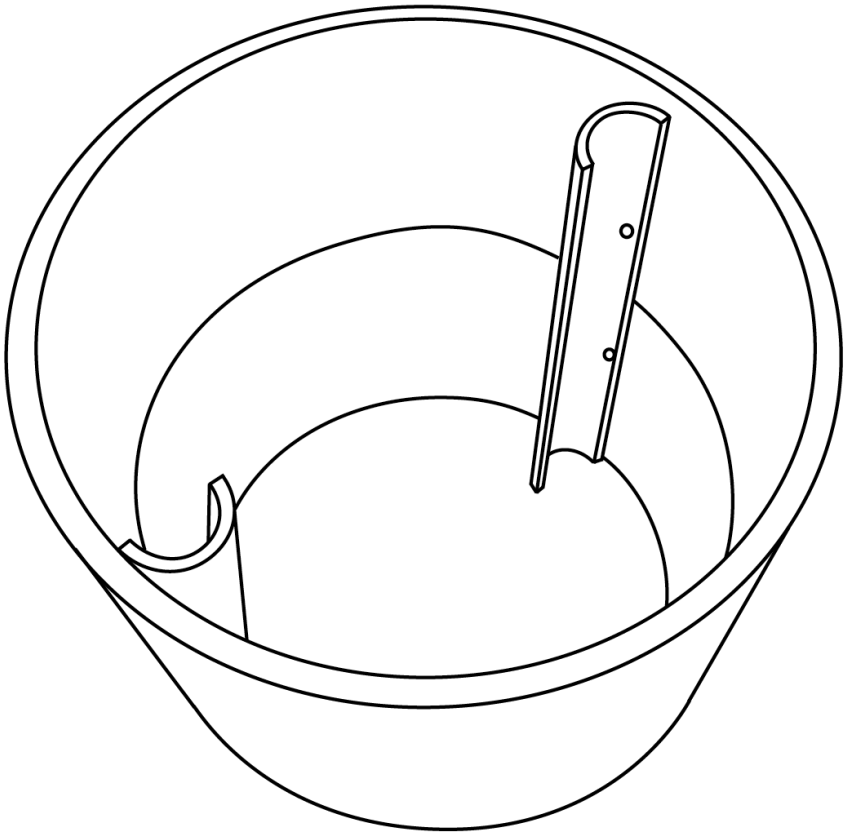
Now take the barrel and mark where you want your door to be. It should be centered and roughly 14 inches wide and 9 inches high. Next, mark where you will place the hinges. They should be placed on the top of the door you drew, set in 1 inch from each side. Mark where each bolt will go to secure them. Last, mark where you will place the locks. They should be affixed to hold down the side opposite from the hinges.

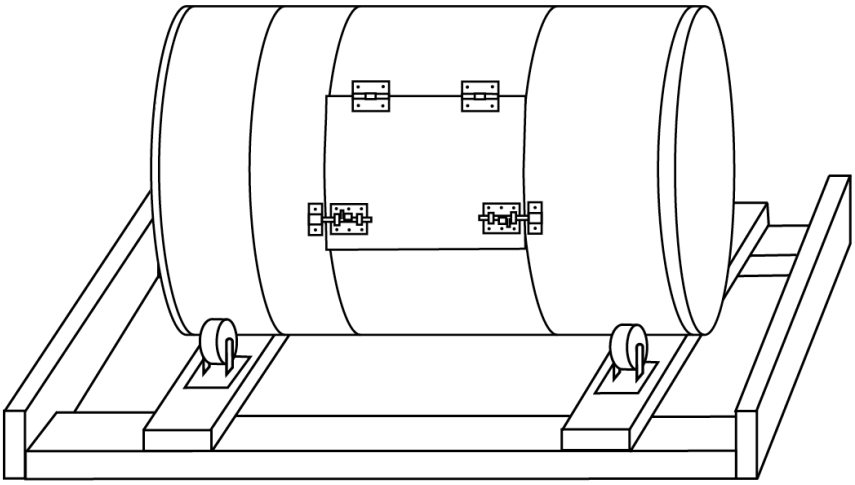
Drill a hole at each corner of the square you are going to cut out for the door. Drill out each bolt hole at this time as well. Then cut out the door itself. Attach each piece of hardware so the door is mounted.



The last step is to secure a pair of baffles made of PVC pipe inside the tumbler to help mix the compost. Mark the PVC pipe and cut it to the length you desire, then cut it in half lengthwise. Drill out bolt holes to mount the PVC inside the barrel. Fix the baffles in place inside the barrel so that they are facing opposite directions, allowing them to catch and turn compost when the barrel is turned. Finally, drill several rows of holes along the sides of the barrel to allow airflow and drainage.

Place the tumbler on the base and give it a spin. Now your composter is ready to fill.





Using Your Tumbler

Start with a layer of browns and then top them with a layer of greens. A healthy compost pile has more browns than greens. Repeat this layering

process, alternating between browns and greens. After you add new material, turn the barrel to aerate the compost. When the container had been almost filled, stop adding new compost to it (and instead begin filling your second barrel, if you have one). When the content becomes dark and crumbly with a pleasant earthy scent, it is ready to add to your garden.

Monitor the moisture level of the compost regularly. It should be consistently damp, similar to a wrung-out sponge. If the compost is too dry, add water to the tumbler; if it is too wet, mix in additional browns to absorb the excess moisture and turn to aerate. If the mixture becomes sludgy, add browns and turn to aerate it. By adding oxygen to the mix, you are fueling the beneficial microbes that are working to digest the decomposing matter and promoting faster decomposition.

Compost is how nature recycles. When we adopt a composting practice, we become part of the natural cycle. The interaction fosters awareness of nature and her processes as we give organic matter back to the earth instead of sending it to a landfill, thereby conserving resources and reducing pollution. Composting also fosters an awareness of our buying and wasting habits so that we are able to evolve our habits into a more sustainable lifestyle. By embracing sustainability at home, we can make a difference in reducing our individual carbon footprints—doing something that actually counts, as it actively helps fight climate change.

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[contents]

How to Gather Pine Resin Without Sticking to Your Car

Diana Rajchel

I love resin incense. The aroma of copal brightens my mood and my home. Frankincense releases an antimicrobial compound that makes the air feel lighter. Myrrh brings me joy and a sense of mystery. Yet all these olfactory treats come with dire concerns about overharvesting. They also come from across the globe, and they're expensive. Meanwhile, I need not leave city limits to get another beautiful resin. Not only is there no cost to the tree to harvest it, but once you learn proper methods, you can collect this resin without cost to your dignity.

Pine trees are abundant in the Midwest. They're a popular source of tree cover and often used in public areas for this reason and to repel mosquitoes. I can head to all but a few city parks in my area and come home with a full jar of tree resin. The trees themselves do not experience any loss from ethical collection.

My fascination with pine tree resin and tar started after I met my partner. They are Finnish-and-Sami-American. Much of their practice revolves around integrating nature, especially trees, into the home. The cultural traditions around the pine tree are many. We take *terva* (pine tar) candy when ill. Gin, made from juniper and flavored with pine, is a medicine in our home. Sauna is a required ritual. We often prepare for our sweat by washing with pine tar soap.

I recognized the full potential of resin collecting when visiting a friend in

her new home. She had purchased a property that boasted an ancient pine tree. It was so old that some of its sap had dried and fallen to the ground in perfect resin crystals—much like the copal I love. A burnable resin could just fall to the ground for collection in North America? I was fascinated!

To my disappointment, pine resin can take over a year to dry and crystallize. My relationship with the substance became an altogether stickier affair.

Collecting Pine Resin

Foraging pine tree resin is easy . . . for the tree. During storms, evergreen trees sustain cuts. As a healing response, their sap wells out over their bark like scabs. Often, the tree releases more resin than it needs. A forager can come and scrape away the surface of the resin using a metal or plastic tool. It's easy to leave the tree what it still needs for healing.

What's not easy is getting it off your hair, fingers, and clothes. If you do it bare handed, you're going to have a hellacious time getting it off your fingers. If you use gardening gloves, they stick to themselves. Let's not talk about what happens to nitrile gloves after about the third scrape.

My first forage had me discovering a wealth of resin on soccer park pine trees. My first collection was spontaneous, and spontaneity was my biggest mistake.

I grabbed what I could find in the back of my car—a plastic knife from a fast-food restaurant and a plastic bag. I collected plenty of resin. I also got tar stuck from hands to elbows. When I returned to my car, I stuck to the surface of anything I touched. I happened to make my choice while waiting for my kid's soccer practice to end. My partner and both of our kids got to witness my bad planning. (I contend collecting the resin was an excellent decision!)

My partner had a good laugh and then took pity on me. They showed me how to rub my hands and arms in dirt so I wouldn't stick to the door handle or every other surface I touched.

It took me a while to find how to get pine tree resin off. While degreasers

and prayer have their place, I found that rubbing alcohol works best. After my sticky wicket, I slowed down to research more ways to process pine resin. I left the resin on my kitchen counter in an open plastic box. I noticed, after a few days, that the ants I fight off every year halted their annual March of Spring. The odor of the pine resin drove them off!

Now, when I go pine resin foraging, I have a protocol. If you want to try it yourself, don't wear anything you'll regret losing. Here's what you want to bring along:

To collect the resin, you will need:

- Cloth gardening gloves with grippy dots. These last the longest when collecting resin. I recommend having 2–3 pairs per foraging adventure.
- Metal butter knife dedicated to resin collection
- Large mason jar with a lid, also dedicated to its single purpose

Processing Pine Resin

Okay, so you've collected your resin. Now what? The next step is to filter it. Tree resin tends to catch a lot of bugs, pollen, pine needles, and plant detritus. You will get best results if it is, for the most part, debris-free.

To process the resin, you will need:

- Metal or ceramic pan. I prefer metal because it's easier to clean with rubbing alcohol.
- Wooden spoon used only for stirring and clarifying pine resin
- Apron, artist's smock, or other clothing cover that also has pockets. It eases carrying your tools while protecting your clothes.
- Cheesecloth and a funnel, or a strainer that you only use for straining resin
- Pair of canning tongs or oven mitts
- Second jar to drain resin into
- Cookie tray with at least ½-inch lip, to prevent spilling resin onto your stove

Digital thermometer for measuring when the resin is ready to pour

To filter resin, you need to heat it. To heat it, you can use a double boiler. I prefer to make a hot water bath in an old pan and set the mason jar I used for collection into the bath. I use the medium heat setting on my stovetop.

If you are so excited to collect pine resin you forego gloves, you're going to find yourself in a sticky situation. To avoid gluing yourself to random surfaces before you drive home or try to open the door to your dwelling, rub your hands in dirt. The dirt creates enough friction that you won't require a friend to peel you off of what you touched. When you need to "de-sticky" in earnest, rubbing alcohol works best, as it acts as a solvent that dissolves the pine tar.

Melting the resin completely can take a few hours. It's a good idea to keep a pitcher or kettle of water nearby to add to the hot water bath while the resin melts down.

The resin should liquify when it hits about 160°F. When that happens, turn off the heat. Set up the cheesecloth and funnel over a different glass jar. Place a few extra cuts of cheesecloth near your workspace. Don oven mitts or pick up the jar with the canning tongs. (Oven mitts may be easier, but if they create mobility issues for you, don't use them.) Transfer the resin a little at a time. If it seems like the fluid is backing up, put down the jar and change out the cheesecloth. You will likely need to compost the fabric after using it to strain the resin.

Waiting for resin to drain is slow, and it takes some muscle to hold still for that long. Once you have transferred as much as you can of the clarified resin, twist the jar lid closed. Allow it to cool, and then store it in a cool, dry place. You can keep it there until you're ready to find what you want to make with it.

Uses for Pine Resin

So far, I have used the clarified collected resin the following ways:

- As an additive to outdoor fires. It does wonders for discouraging mosquitoes.
- As a passive kitchen insect repellent
- As a quick-and-dirty glue for craft projects
- For first aid over small cuts and scrapes—the resin is an antiseptic and works sort of like a liquid bandage!

The above uses are applicable before the material dries completely. Once it has dried out so much that the stickiness disappears, I'll have some crystals I can judiciously place in a Yule log fire or burn as incense when feeling especially bugged.

I wish you good hunting and ask that you honor the forager's code: Take only what you need and always leave at least 70 percent of what you're gathering behind. If you can't use all that you took, see if someone near you can use it so that it doesn't go to waste.

Also, please don't follow my shoot-from-the-hip example the first time you forage. Your car will thank you when you don't have to have someone help remove your fingers from the steering wheel.

Further Reading

Everything in my article comes from direct experience and aurally transmitted knowledge. If you learn better from video and audio sources, I highly recommend the work of Alexis Nikole Nelson, known on social media as @blackforager. Her joy in plants is contagious!

Even so, it's fun to learn more about the possibilities of pine resin foraging from documented sources.

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[contents]

Eco-Printing Fabrics with the Bounties of Your Garden

Annie Burdick

If you've ever gotten rid of a white t-shirt after it got a little stain on it or wished you could reinvent your "boring" plain-colored tablecloth, curtains, or sheets, there's a relatively simple DIY solution you can try, using only the delights that nature—including your own yard or garden—has to offer. Often called eco-printing, or sometimes "flower pounding," the process of transferring the color and shape of natural materials onto fabric can be done in several different ways and can create some truly beautiful, wearable, and usable creations. Yes, you can always use natural dyes or fabric dyes from the store to reinvent your textiles, but if you have the chance to use flowers and leaves foraged from your garden, the local park, or a hike near your home, why wouldn't you? The natural colors and the gorgeous shapes of those materials makes anything you create truly one of a kind.

What You'll Need

For any method, one of the most important elements is choosing a target fabric (i.e., the fabric you're printing onto) that is suitable for taking on natural dyes. This DIY only works on natural fibers—look for anything made from cotton, hemp, silk, wool, bamboo, linen, or a combination of these. Garments made from synthetic materials like polyester or rayon will

not take on the natural colors.

You'll also need a barrier material to keep colors from bleeding through onto other surfaces or other parts of your fabric. Easy options include parchment paper, thin cardboard, scrap cloth, paper grocery bags, and cardstock craft paper—it's a perfect time to make use of items that may otherwise be garbage!

Last, of course, you'll need your natural materials—flowers, leaves, and other plant components you want to dye your fabric with.

Great Plants for Eco-Printing

Above all, part of experimenting with eco-printing is being okay with trial and error and having some plants print beautifully and others not show up well. Some flowers, even with bright colors, may not print well, while others show up vibrantly on fabric. Be patient and experiment with what grows near you and looks the best. Test out a few plants on a scrap of material before using them on your nice linen shirt.

Here are some plants that tend to work well and can be a good starting point:

- Pecan or walnut leaves
- Rose flowers or leaves
- Every part of the eucalyptus plant
- Maple and oak leaves
- Sumac
- Marigold
- Calendula
- Cosmos
- Coreopsis
- Birch, cherry, or willow bark
- Geranium

- Tea leaves
- Hydrangea

Method 1: Steam

This route utilizes steaming to imprint the natural colors and images onto your fabric. Follow these steps to create your eco-printed pieces!

You will need:

Your fabric
Leaves and flowers
Barrier material
Wood dowel
Cotton string
Steamer or large pot with a steamer basket
Heat source

1. Dampen your target fabric and wring it out to remove excess moisture. If you want the best results, pre-treat your fabric by scouring and mordanting (you can find tutorials for both processes online). Lay your damp fabric out flat.
2. Start arranging your flowers and leaves face down on the fabric. You can opt to place them across the entire thing or just on one half, if you'd prefer to fold the fabric in half and have a mirrored image. (This can create a more cohesive pattern.)
3. If you arranged them on only half, flip the other side over on top of the flowers, sandwiching them in between. If you placed them across the entire fabric, cover the fabric with your chosen barrier material.
4. Place the dowel at the edge of the fabric and start rolling the pile tightly around the dowel.
5. Wrap string (or Ace bandages, as one printing expert recommends!) tightly up and down the length of your wrapped rod.[31]

6. Place your tightly wrapped rod in the steamer or steamer basket and heat for 5–15 minutes.
7. Remove and let cool.
8. Once cool, unwrap to see your printed fabric.
9. See care instructions starting on page 184.

Method 2: Pounding

The second popular method for eco-printing is a pounding style. For this method, in addition to your target fabric and chosen leaves and flowers, you'll need a sturdy surface, like a piece of scrap wood, that you can pound on, in addition to a mallet. You will also need to pre-treat your fabric by scouring, mordanting, or both. Make sure to plan ahead and take care of this step before your eco-printing session.

You will need:

Your fabric
Flat surface for pounding
Barriers and scrap fabrics
Mallet
Leaves and flowers

1. After pre-treating your fabric, lay it out flat on a surface that you can pound on, like a work table or sturdy scrap piece of wood. Slide a barrier between the layers of your fabric, if applicable (like a shirt or dress, so you're working on one side of the material at a time).
2. Place a softer barrier, such as cloth, between your target fabric and the wood or other surface upon which you're pounding.
3. Place flowers or leaves face down onto the fabric. Do just one or two at a time so you don't shift others while you pound them, and you can see what spaces you still have to fill.
4. Cover the flower or leaf with a piece of scrap fabric.
5. Use a mallet to repeatedly pound the fabric-covered flower, about

10–15 pounds. Remove the scrap fabric and peel up the flower or leaf from the main fabric, leaving behind the printed image.

6. Repeat these steps for as many flowers and leaves as you'd like to print onto the material. This can be a time-consuming process, but if you go carefully piece by piece, you'll be left with a gorgeous, intentionally designed final product.

Washing Your Garments and Setting the Color

Your printed fabric isn't totally finished until it's received its final treatment. You can wait a week or two to do this, but ultimately need to follow these steps to complete your project!

When you're ready, open your bundle (if steaming) and remove any vegetation. If your piece has dried fully, it'll be harder to remove the plants, but it is necessary to remove all plant elements before washing.

In the first wash cycle, run your item on its own or with other items printed with the same materials. If you printed one piece with a particular plant and another with something else, wash them separately to avoid the colors mixing.

Wash your piece either by hand or on a very gentle cycle in your machine, using a gentle natural soap, like olive oil, goat's milk, or coconut milk soap. Wash until the water runs clear. This removes excess dye on the surface, but as long as you're washing gently and using natural soap, it won't strip all the printed color out.

Finally—don't skip this important last step!—once they're washed and damp, not soaking wet, immediately iron your pieces on the hottest setting of your iron. Move the iron continuously over the fabric so you don't overheat any particular spot, but this will help set the dye and make for the best possible look to your finished product.

After using the eco-printed pieces in the future, you can wash them on gentle cycle in your machine or by hand—preferably using more natural soaps. The colors will fade or oxidize over time, but if you followed all the initial steps properly, you shouldn't lose the prints altogether, even after

multiple washes.

Uses for Natural Fabric Printing

The potential applications of natural dyeing methods are almost limitless, but if you're feeling stuck on how to try this project in your life, here are some potential upcycling outlets you might consider:

- Give new life to a worn-out shirt, skirt, or dress in a light color rather than donating or trashing it. If you have a white- or cream-colored garment that has a few hard-to-remove stains, try dyeing over them with plants, making a new and beautiful version of the clothing piece that you'll actually wear again.
- Make a custom tablecloth to accent holiday celebrations and dinner parties. Thrift stores have no shortage of vintage tablecloths, often simple white or cream ones that are just asking for some decorative flower-dyed accents. They can become the new centerpiece of your next holiday celebration or dinner gathering or just day-to-day décor.
- Dye boring curtains to bring new life to your space. Simple white curtains can be a great, unassuming element of a bedroom or living room, but if you're a little bored of the simple look, add a pattern of floral imprints that guests will notice instantly. And you can tell them all about how you dyed it yourself!
- Make a custom outfit for a kiddo in your life. Floral-printed clothing is a fan-favorite among kids—not only can they help in the creation and design of their new clothing piece, but you can make them their dream dress, skirt, or shirt to wear over and over.
- Upcycle basic kitchen towels. Add some leaf or flower print patterns to your simple white or cream towels for a pop of color and natural beauty in your kitchen. It can be a great nod to all the herbs you're cooking with!

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[contents]

Plant Profiles

Plant Profiles

This section features spotlights on individual herbs, highlighting their cultivation, history, and culinary, crafting, and medicinal uses. Refer to the key below for each plant's sun and water needs, listed in a helpful at-a-glance table.

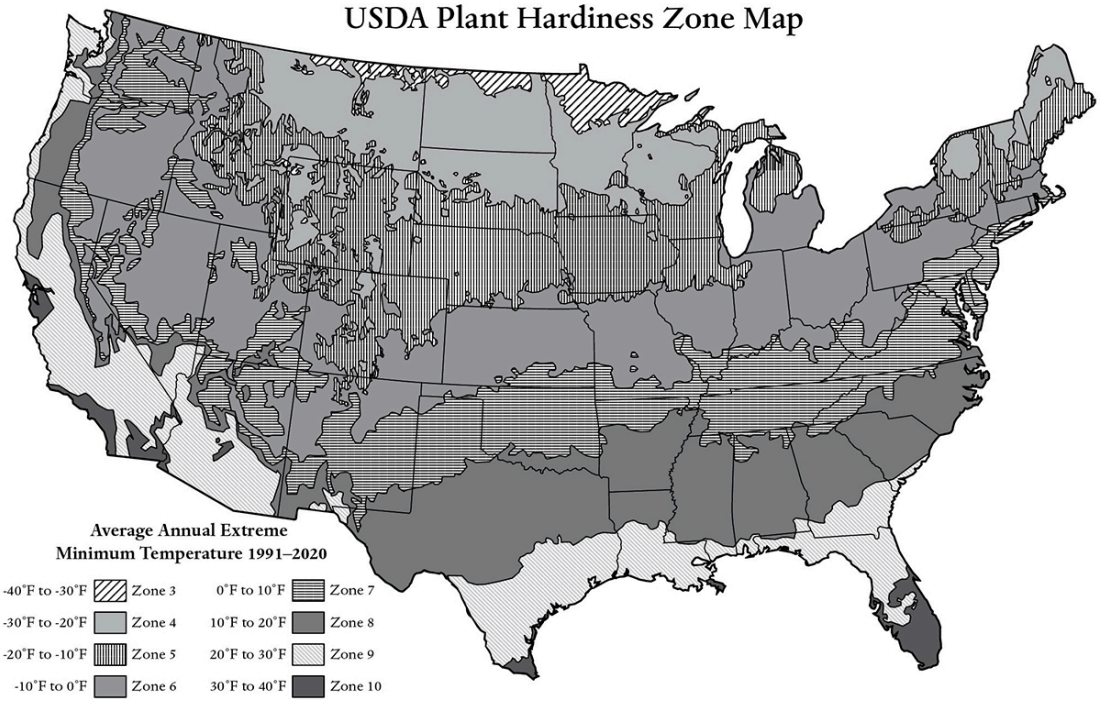
Key to Plant Needs	
Sun	
Shade	—
Partial shade	☼
Partial sun	☼ ☼
Full sun	☼ ☼ ☼
Water	
Water sparingly	💧
Water frequently	💧💧
	💧💧💧

USDA Hardiness Zones

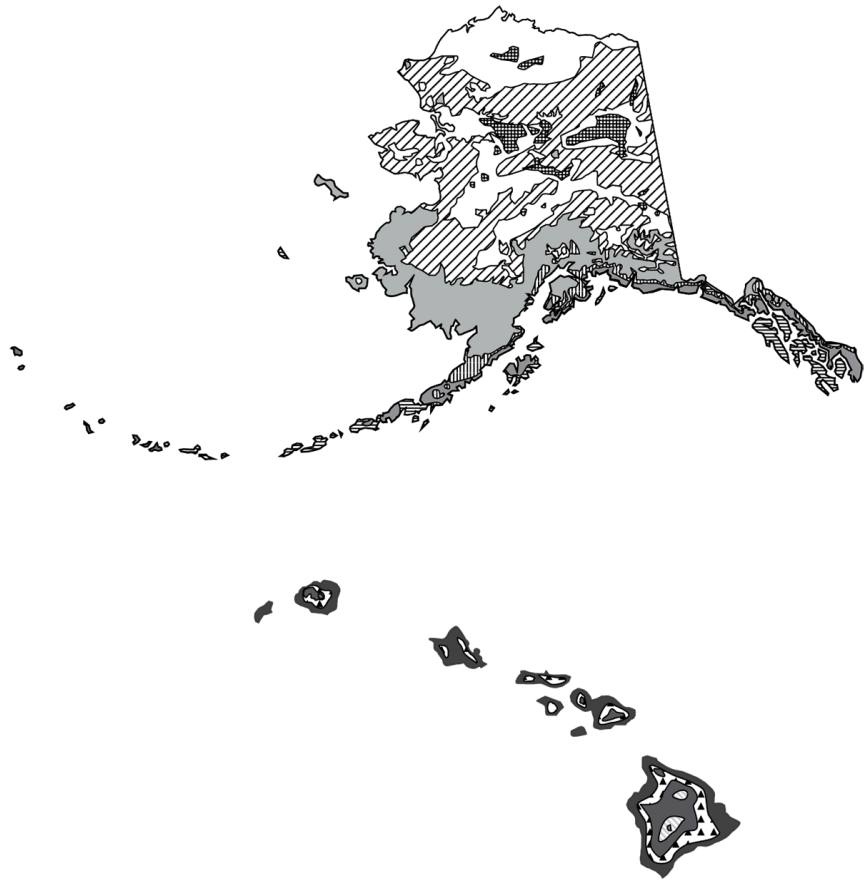
The United States is organized into zones according to the average lowest annual winter temperature, indicating a threshold for cold tolerance in the area. This USDA Plant Hardiness Zone Map, released in late 2023, uses data collected between 1991 and 2020. For best results, plant herbs that can withstand the climate of their hardiness zone(s) and bring less hardy plants indoors during colder weather. Seek additional resources for high summer temperatures, as these can vary within zones.

It is helpful to keep track of temperatures and frost dates in your neighborhood or check with a local gardening center or university extension for the most up-to-date record. Climate change and local topography will also affect your growing space, so compensate accordingly.

USDA Plant Hardiness Zone Map


Average Annual Extreme
Minimum Temperature 1991–2020
-40°F to -30°F Zone 3
-30°F to -20°F Zone 4
-20°F to -10°F Zone 5
-10°F to 0°F Zone 6
0°F to 10°F Zone 7
10°F to 20°F Zone 8
20°F to 30°F Zone 9
30°F to 40°F Zone 10

USDA Plant Hardiness Zone Map (Cont.)



Average Annual Extreme Minimum Temperature 1991–2020

-60°F to -50°F	Zone 1	10°F to 20°F	Zone 8
-50°F to -40°F	Zone 2	20°F to 30°F	Zone 9
-40°F to -30°F	Zone 3	30°F to 40°F	Zone 10
-30°F to -20°F	Zone 4	40°F to 50°F	Zone 11
-20°F to -10°F	Zone 5	50°F to 60°F	Zone 12
-10°F to 0°F	Zone 6		
0°F to 10°F	Zone 7		

[contents]

Potato

Anne Sala

The potato takes the prize for being one of the most heroically humble vegetables in the dietary world. It is a lumpy vegetable that grows underground, but the potato's flavor, nutrition, and versatility help it bolster the diets of communities around the world. And to this day, no matter where you travel, you will probably find potatoes on the menu.

Potato	
Species	*Solanum tuberosum*
Zones	3–10b
Needs	☼☼☼ 💧💧
Soil pH	5–6.5
Size	2–3 ft. tall

The potato's scientific name is *Solanum tuberosum*, and it is a member of the nightshade, or Solanaceae, family, along with tomatoes, peppers, eggplants, morning glories, and tobacco. Its origins are in the Andes Mountains of Peru, Ecuador, Bolivia, and Chile in South America. The first potatoes are thought to have grown along the shores of Lake Titicaca in Peru.

Nightshade plants all have toxic components, and that is the case with potatoes. The leaves and stems contain toxins that ward off hungry predators. The two most abundant chemicals are solanine and chaconine, known as glycoalkaloids. If ingested, they can cause gastric distress, convulsions, hallucinations, shock, numbness, and even death. If a potato is exposed to sunlight for too long, its skin and flesh will produce glycoalkaloids as well, turning it green and bitter.

There are over 4,000 varieties of potatoes. Most only grow in their native Andes Mountains and each one is carefully cataloged in the archives of the International Potato Center (CIP) in Lima, Peru. Potatoes have adapted to

growing from at sea level to over 4,700 meters, and from southernmost Chile all the way north to Greenland.[32]

Potatoes' skin color can be red, brown, yellow, pink, or purple. Their shape can be smooth, lumpy, crenelated, spherical, or long and thin. The flesh comes in different shades too—usually white or yellow, but some are blue or purple. The consistency of the flesh can be starchy, waxy, or somewhere in between (called all-purpose potatoes).

When one looks at a plate of french fries—fresh from the fryer and glimmering with salt—it is hard to remember how nutritious potatoes are. Along with fiber and carbohydrates, the potato provides many vitamins and minerals, including vitamin C, potassium, and copper. It is fat-free, gluten-free, and cholesterol-free.

While grown as an annual, the potato plant is actually a perennial. It has thick, hairy stems that can grow up to three feet high. Clusters of oval or heart-shaped leaves grow in clusters of four or five along the stems. Some potato plants produce five-petaled, yellow-centered flowers in midsummer. The flowers can be purple, white, blue, or pink. These cheerful blossoms turn into small round fruits that look a bit like cherry tomatoes but are inedible to humans.

Once the blooms begin to die, the plant starts a tuberization process to create starchy growths at the ends of thin underground stems called stolons. The tubers are what we eat—the potato. If the tubers were not harvested, the plant would use the stored nutrients to fuel its growth in the spring.

Growing Potatoes

After many years of successful bumper crops in connection to my *Herbal Almanac* assignments, I had to raise the white flag on potatoes. I went to look for my crop the other day and found the potato plants gone! It was mystifying until I saw a freshly dug hole—they were eaten by a critter! Thankfully, the majority of people who attempt to grow potatoes have a much easier time of it.

At my children's school, they are growing potatoes in special felt potato

bags filled with soil. They will be ready to harvest just in time for the school to make a massive batch of communal soup. The students will simply need to upend the bags and pull out the potatoes.

My mother is also expecting a successful harvest from the volunteer plants growing in her compost pile. This fall, she and some of the grandchildren will dig into the fresh-made dirt and pull out enough spuds to replace all the potatoes she tossed on the pile in the spring.

Do not eat green potatoes, even when cooked!

In addition to beds, bags, and compost piles, you can grow potatoes in a number of other ways. The traditional way is to put the seed potato into the ground and pile nutrient-rich soil around the emerging stems as they grow. This encourages the new potatoes to form in a more accessible location.

Another way that makes harvesting potatoes easier is to grow them under a layer of straw. Food writer Barbara Kafka describes this as her preferred potato-growing method in her cookbook *Vegetable Love*. She sets the seed potatoes on the surface of her garden and piles straw on top of them. As the stems grow up, add more straw. Then, when you want a potato or two, use a pitchfork (or your hands) to lift up the edge of the straw and grab a few, leaving the rest of the plant to continue growing.[33] When the plant begins to wither, pull away all the straw and bring in the harvest.

Coming Down from the Mountain

There is evidence that humans began cultivating potatoes more than 8,000 years ago. Over time, this bitter, poisonous plant became a mainstay in their diet. The Inca have a potato goddess, Axomamma, the daughter of the earth goddess, Pachamama. They buried their dead with potatoes and offered

special potatoes to the gods to ensure a bountiful crop the following season.

These first cultivators ate potatoes roasted, fermented, and even freeze-dried. Freeze-drying the potatoes on the cold mountain slopes made them shelf-stable, and they could keep for years in this state. Many people who still live in the Altiplano region, otherwise known as the Andean Plateau, still process potatoes in this manner. It is called *chuño* and is considered a delicacy.

When the Inca first interacted with Spanish explorers in the 1500s, they were harvesting over 1,000 edible varieties of potato. The explorers brought a few specimens back to Europe, where they were viewed as a novelty, but maybe not as interesting as peanuts, chocolate, and tobacco.

At first, potatoes didn't grow so well in the European climate. The day lengths were all wrong, particularly in the northern countries. The first successful potato crop is thought to have grown in Spain, where it was quickly embraced by the lower class as an abundant and nutritious food source. A variety of potato was finally discovered that could thrive in the northern climes and became the primary food for the impoverished in that region, including the Irish.

By the mid-1700s, nearly every country in Europe was growing potatoes. The last holdout was France, until the country began to heave with political unrest. At that point, the French stopped looking down their nose at this culinary trespasser—the revolutionaries needed to eat! Plus, potato crops were easy to hide from the tax collector, unlike wheat or vegetables. Families could surreptitiously dig up a few tubers for dinner and keep the rest of the crop hidden.

Some historians attribute the introduction of the potato in Europe to the rise of empires—giving the countries strength in both manpower and stamina. Wherever the potato grew, famine was averted (for the most part—the terrible famine in the mid-1800s in Ireland proved that relying mainly on one crop to feed a population is a bad idea). Historian William H. McNeill said, "By feeding rapidly growing populations, [the potato] permitted a handful of European nations to assert dominion over most of the world between 1750 and 1950."[34] Today, according to the Food and

Agriculture Organization of the United Nations (FAO), the potato is the third-most consumed food crop in the world. In honor of this “heroic” status, in 2024, the FAO declared May 30 the International Day of Potato.[35]

Favorite Potato Recipes

The potato is no stranger to most cooks, and it is easy to come up with recipes in which the potato’s tastiness is at the forefront—whether mashed, fried, roasted, boiled, or baked. For this section, I decided to bring you one recipe that gives a nod to the innovative way the first potato eaters enjoyed serving this “bitter” vegetable and another that showcases the potato’s ability to be a secret ingredient.

You Can Dip It!

This recipe has all the hallmarks of a great potato recipe because it is fried, includes cheese, and you dip it!

Eating potatoes in this manner—with a dipping sauce, no less—may be one of the original ways potatoes were eaten. At first, all potatoes were poisonous to varying degrees. That did not prevent them from becoming a staple food. But how did the Andean people eat them without becoming ill or dying? With what must have been a careful period of trial and error, the first potato eaters discovered they could consume the “bitter vegetables” without severe consequences if eaten with a serving of special clay called *chaco* or *p’asa*.

A study conducted at McGill University in the 1980s found that chaco clay particles would cling to glycoalkaloid toxins in a test tube. In a person’s mouth, as they chew a bitter potato with chaco, it is possible the clay mimics this behavior, allowing the toxins to pass through the digestive system without getting absorbed by the body. Also, the clay seems to remove the potatoes’ bitter taste.[36]

The tradition of eating this clay continues to this day. *Arcilla de chaco* is a sauce made with chaco clay, water, and salt. It is traditionally served with potatoes. The sauce recipe that follows does not include clay but another

native South American food—peanuts!

Llapingachos (Ecuadorian Potato Cakes)

Llapingachos are a comfort food that can be served at any time of day. Include fresh-made salsa, sunny-side-up eggs, sausage, and avocado to round out a meal. I use two types of potatoes so the cakes have a smoother consistency but still hold together while being fried. Serves 4 (roughly 8 cakes).

You will need:

- 2 large russet potatoes (starchy), peeled and cubed
- 2 medium red potatoes (waxy), peeled and cubed
- 4 Tablespoons chives, minced
- 1½ Tablespoons sweet paprika
- 1 teaspoon achiote (optional)
- ½ teaspoon salt or to taste
- 1 cup crumbled queso fresco or shredded mozzarella cheese
- 2–4 Tablespoons vegetable oil, as needed

1. Place the potatoes in a large saucepan or stock pot and pour in enough water to just cover. Set the pan over high heat and bring to a boil. Let cook for about 8–10 minutes until tender. Drain and set aside.
2. Mash the potatoes until mostly smooth, then add the chives, paprika, achiote (if using), and salt. Mix thoroughly.
3. Scoop up a portion of the potato mixture equivalent to ⅓ cup and roll it into a ball.
4. Use your thumb to push a hole into the center of the ball. Stuff in some of the cheese and then close up the hole.
5. Carefully flatten the balls into plump patties and let them rest at room temperature for about 30 minutes.
6. Heat a nonstick griddle or frying pan over medium heat with a splash of vegetable oil. Fry the patties for 5–6 minutes on the first

side until browned. Flip them over and brown the other side. The patties can be fragile, so try not to move them very much.
7. Put the cooked patties on a rack in a warm oven until ready to serve.

Salsa de Mani (Peanut Sauce)

This is a popular sauce in Ecuador. It is traditionally used on llapingachos, other potato dishes, and shellfish. While *salsa de mani* is not made with clay, I thought it was fitting that peanuts come from under the earth too.

You will need:

2 Tablespoons vegetable oil
1 bunch (8–10) spring onions, chopped
2 teaspoons ground cumin
1 teaspoon achiote powder (optional)
Salt to taste
1 cup smooth, no-sugar-added peanut butter
2 cups water
Pepper to taste

1. Heat the oil in a medium sauté pan over medium heat. Throw in the spring onions, cumin, achiote, and salt. Sauté for about 3 minutes, or until the spring onions soften.
2. Carefully stir in the peanut butter and water until combined.
3. Continue stirring the sauce for about 10 minutes until it has thickened. Season with pepper and more salt if necessary.
4. Remove from heat and pour into bowls for each person, or directly onto the llapingachos, and serve immediately.

Tasteless, Odorless

The potato is such a starchy vegetable that it is actually possible to extract the starch and use it in non-food applications, such as glue, a sizing ingredient when milling fabric, and a dissolvable component in

pharmaceuticals. Back in the food realm, potato starch is used to add extra crispiness to fried foods and also as a thickener in soups and sauces. I discovered this surprising quality when I was preparing my wedding favors. My husband and I gave out hand-filled tea sachets along with beautiful silver packets of Italian hot chocolate. I did not expect to see potato starch in the ingredients list. Much like corn starch and wheat flour, potato starch will thicken liquids when heated, but with less of an aftertaste.

Since that first experience, I have learned to make Italian hot chocolate from scratch. It is a sophisticated twist on a cold-weather treat. This recipe serves 4.

Italian Hot Chocolate

4 Tablespoons unsweetened cocoa

3 Tablespoons granulated sugar

1 Tablespoon potato starch

⅛ teaspoon salt

½ cup cold milk or nondairy alternative, plus 2 cups

½ teaspoon almond extract (or to taste)

1. Whisk cocoa, sugar, potato starch, and salt in a medium saucepan. Turn it into a slurry or paste by pouring ½ cup cold milk into the pan and whisking until there are no lumps (or very few). You can add a bit more milk if necessary to moisten everything.
2. Add the rest of the milk and set the pan over medium heat. Continue whisking to avoid scorching the milk.
3. When the mixture begins to boil, it will thicken. Lift the whisk occasionally to check the consistency—it should pour off the wires in a very luxurious way. It is hard to describe what you are looking for, but you want it to be thicker than your average hot chocolate.
4. When the hot chocolate reaches the desired consistency, remove the pan from heat and stir in the almond extract.
5. Pour the hot chocolate into cups and serve immediately. The chocolate will continue to thicken to the consistency of pudding—

not necessarily a bad thing!

The humble potato's history is full of surprises. Where would we be without it? The world would be very different if spuds had never left the shores of Lake Titicaca. I cherish the thought that we are still eating potatoes like they were originally: served piping hot with a dipping sauce, whether made with clay, peanuts, or tomatoes. It gives a whole different twist to the oft-heard phrase "Do you want fries with that?"

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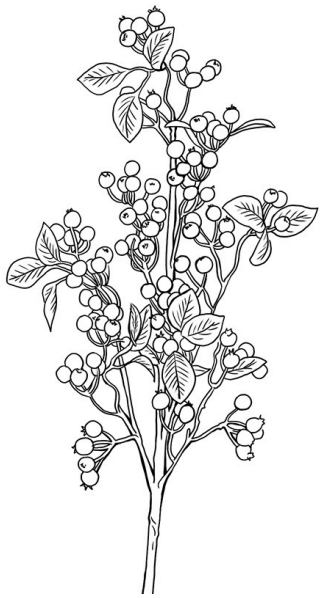
[contents]

Cranberry

Marilyn I. Bellemore

As I was driving home after dinner on an autumn evening in the eastern part of Prince Edward Island, I noticed my neighbor's unoccupied car parked alongside a ditch. I stopped to make sure everything was okay, and there he was, knee deep in the brush with a wooden rake.



Cranberry	
Species	*Vaccinium macrocarpon*
Zones	2–7
Needs	☼☼☼ 💧💧
Soil pH	4.2–5.5
Size	7' long, 2–8" tall

"Cranberries," he yelled up to me. "I'm harvesting cranberries." For me, a New Englander, the fruit is synonymous with bogs in deep red hues that cover acres and acres of land primarily in Cape Cod, Massachusetts. It's not something I expected to see in a tiny marsh in a remote maritime town. I was excited and intrigued at the same time and gladly accepted a large freshly picked bag.

My knowledge of the cranberry goes back to my early teen years with family visits to Ocean Spray's Cranberry World museum in Plymouth, Massachusetts. There were dioramas showing the history of Native Americans harvesting cranberries in New England (circa mid-1500s) and exhibits depicting the cultivation and mass production (excuse the pun) hundreds of years later. I remember a display that highlighted the layers inside an oversized cranberry and showed its many uses. My favorite part of the tour was the tasting room at the end where visitors could sample as many different flavors of cranberry juice as they liked. The museum closed nearly twenty-five years ago, but what I learned left a lasting impression.

For the Narragansett and Wampanoag tribes from Rhode Island and Massachusetts, respectively, cranberries were versatile and a part of everyday life. They made the fruit into puddings and sauces. But its most important use was for what they called pemmican. It was created by grinding and mixing cranberries with dried fish or deer meat and melted tallow. It was a high-protein and popular food source that was formed into patties or cakes and baked in the sun. You might say pemmican was equivalent to today's energy bars.[37]

The Canadian Inuits smoked the leaves of the cranberry as if it were tobacco, while the Chippewa used the berries to trap snowshoe hares. Many Native Americans tribes in areas where the fruit grew wild used it to dye clothing, blankets, and porcupine quills for jewelry. Additionally, cranberries had medicinal properties: They were made into a poultice to help heal cuts and were pulverized and mixed with corn meal as a cure for blood poisoning. They were also used to treat fevers.[38]

Incidentally, cranberries, blueberries, and Concord grapes are the three cultivated fruits that are native to North America.

Today, what's commonly known about cranberries is that they're considered a superfruit because of their antioxidant powers, and many people reach for a glass of juice when they feel a urinary tract infection coming on.

Growing and Harvesting Cranberries

Cranberries grow on vines in bogs or beds (the words are interchangeable) that are layered with sand, clay, peat, and gravel. The first bogs were

formed by glacial deposits. The growing season is from April to November.

Although the cranberry grows wild in both the United States and Canada, the first cultivation took place in each country nearly sixty years apart. Around 1816, Captain Henry Hall, a Revolutionary War veteran from Dennis, Massachusetts, observed that cranberries on his property grew better when the sands on Cape Cod blew over them. He is considered to be the first cultivator in the United States because he transplanted the vines and put sand over them. Using this method, Hall was able to grow thirty barrels of cranberries within four years that he then sold for a profit.[39] Growing cranberries commercially in Canada can be traced to the Annapolis Valley region of Nova Scotia in 1872. There, William MacNeil planted the crop on his farm in Melvern Square. In the 1890s, there was enough cranberry growth that the fruit no longer had to be imported from New England.[40]

For many years, we had what I thought was a magazine rack in our bathroom. It wasn't until I saw my neighbor gathering cranberries that I realized it was, in fact, a vintage wooden cranberry rake! Let's just say it now has a prominent place in our family kitchen.

When it comes to harvesting cranberries commercially, depending on the size of the bog, it can take from half a day to five days to complete. Most imagery surrounding cranberries shows them in water, but bogs are dry for most of the time. At harvest in September, water is added to the beds to fill just up to the vines.

The cranberries are still attached to the vines, but the pockets of air inside the fruit cause them to float. Cylindrical machines known as water reels have a spindle on the front that acts like an eggbeater. They go underneath the water and stir the vines enough to let the berries float to the surface.

Additional water can be added to surpass any weeds that are present.

Next, booms (floating barriers) are used to round up the floating cranberries on the surface. Then the fruit is pumped or conveyed into a truck that will transport the berries to the factory. Some collection systems are able to sort out debris as the batch is pulled into the truck.[41]

Since cranberry vines will survive indefinitely, there's no need to replant them if they're not damaged. However, Decas Cranberry in Carver, Massachusetts, was the first company to use helicopters to lift cranberries off the bogs in the late 1970s to prevent or avoid any damage. John Decas, former CEO of the company, explained that the bigger the crop, the more machines would go back and forth taking cranberries off the vines. If damage was caused, that would reduce the crop the following year.

The technique of using a helicopter had to be perfected. A sling was developed that would attach to the rotorcraft and be able to pick up individual boxes (and later bins) of cranberries on a pallet, then fly them over to trucks without spilling the fruit.[42]

In the world today, the United States is the country that produces the most cranberries commercially, with Wisconsin providing more than half of the growth followed by Massachusetts, Oregon, and New Jersey. Canada is second, with British Columbia and Quebec as the leading cranberry-producing provinces.[43]

Come December, which will be the start of another brutal Vermont winter for me, I will recall Henry David Thoreau's chapter on cranberries in his book *Wild Fruits*. With wit, he writes that the red berries "cut the winter's phlegm, and now you can swallow another year of this world without other sauce."[44] I like to think Thoreau is implying that cranberries will help get me through the discomforts of winter and, furthermore, make enduring another year of life's difficulties much more bearable.

Marilyn's Recipes

Hearty Beef and Cranberry Stew

This is a family favorite on cold winter days when cranberries are in season, but I still love to make it year round because it's an easy slow cooker meal. Feel free to substitute your favorite vegetables. This recipe serves 4–6.

You will need:

- 1½–2 pounds beef stew meat (cut to your desired size)
- 1 cup sliced mushrooms of your choice
- 1 large yellow onion, peeled and chopped
- 3 large carrots, peeled and chopped
- 2 cups beef stock, or 2 beef bouillon cubes with 2 cups water
- 1 cup dry red wine
- 3 Tablespoons tomato paste
- 2 Tablespoons olive oil
- 3 Tablespoons of fresh or dried thyme
- 2 teaspoons brown sugar
- Salt and pepper to taste
- 1 can (15 ounces) peas, strained (optional)
- 2 cups fresh cranberries

1. Brown the stew meat in olive oil in a frying pan.
2. Put the meat in a 5- or 6-quart slow cooker. Add all the other ingredients except for the cranberries and peas and stir well. Add water to fill the crockpot if needed.
3. Cook on high for 4–5 hours or low for 6–7 hours.
4. Two hours before the stew is ready, add the cranberries to the crockpot.
5. Peas can be added about 15 minutes before the stew is done.

Pumpkin Cranberry Muffins

I love to eat these muffins warm out of the oven with a cold glass of milk. They're delicious to have at breakfast, on special occasions, and for a decadent midnight snack! This recipe yields a dozen muffins.

You will need:

¾ cup sugar
2 cups all-purpose flour
3 teaspoons baking powder
½ teaspoon salt
½ teaspoon cinnamon
1 teaspoon allspice
¼ teaspoon ground cloves
2 large eggs
⅓ cup vegetable oil
¾ cup canned pumpkin
2 cups fresh, chopped cranberries
½ cup semisweet chocolate chips (optional)

1. Preheat the oven to 400°F.
2. Sift together the dry ingredients into a bowl and set it aside.
3. Beat the eggs, oil, and pumpkin together until well blended.
4. Add the wet ingredients to the dry ingredients and stir until moistened.
5. Mix in the chopped cranberries. If using chocolate chips, add them now.
6. Spoon the batter into a greased muffin pan.
7. Bake for 20 minutes or until golden brown.

Cranberry Walnut Biscotti

In my family, this recipe was made at Christmastime and added to trays of festive cookies to give to relatives and friends. Today, I enjoy biscotti at breakfast with coffee. It's definitely worth the effort to make because the results are delicious. This recipe makes 15–18 cookies.

You will need:

¾ cup white sugar
¼ cup olive oil

2 teaspoons vanilla extract
½ teaspoon orange extract
2 large eggs
1¾ cups all-purpose flour
1 teaspoon baking powder
¼ teaspoon salt
1½ cups shelled, chopped walnuts
½ cup dried cranberries

1. Preheat the oven to 350°F.
2. Mix the sugar and oil together in a large bowl until well blended.
3. Add vanilla and orange extracts, then beat in the eggs.
4. Combine flour, baking powder, and salt in a separate bowl.
5. Gradually stir the dry ingredients into the egg mixture until combined.
6. Fold in the walnuts and cranberries.
7. Divide the dough in half and form each piece into a 12 × 2-inch log on a parchment-lined cookie sheet.
8. Bake until the logs are light brown, about 35 minutes.
9. Remove the cookie sheet from the oven and set aside to cool for 10 minutes.
10. Reduce oven temperature to 275°F.
11. Cut the logs on the diagonal into ¾-inch slices.
12. Put the slices cut-side down on the cookie sheet and bake an additional 8–9 minutes.

Strands of fresh cranberries were a popular decoration on the Christmas trees of early American Colonists in addition to other fruits and nuts. Every December, I carry on the tradition by stringing cranberries with an embroidery needle and twine, but I put them on outdoor trees. The bright red berries on a backdrop of pure white snow are a delight to see, along with the woodland creatures who enjoy eating them.

Refreshing Cranberry Sorbet

I've always been a fan of frozen treats, but after winning an old-fashioned ice cream maker several years ago, I decided I'd learn how to make sorbet. This recipe serves 8.

You will need:

- 12 ounces or 3½ cups fresh cranberries
- 1¾ cups granulated sugar
- 2 cups white cranberry juice
- 1 cup water
- ¼ teaspoon kosher salt
- 2 Tablespoon light corn syrup
- 2 teaspoons lime zest

1. Place the cranberries, sugar, white cranberry juice, water, and salt in a saucepan and bring to a boil over high heat.
2. Reduce the heat to low, cover, and simmer for 15 minutes, until all the berries have popped and the sugar has dissolved.
3. Cool for 10 minutes.
4. Working in batches, puree the mix in a blender until smooth.
5. Press it through a fine-mesh strainer to remove seeds and pulp, which you will discard.
6. Stir in the corn syrup and lime zest.
7. Cover and refrigerate the mix for several hours, until completely chilled.
8. Process it in your ice cream maker according to the manufacturer's instructions.

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[contents]

Hosta

Charlie Rainbow Wolf

Hostas! Some people love them, some people loathe them, but they do seem to be a regular contender when it comes to gardening choices. Most of our local greenhouses and chain stores carry them, and fancier hostas are available from hosta specialists. They're reasonably easy to grow, fairly tolerant of being neglected, and can be found under many trees and in shady areas of public parks and private gardens. What is it about hostas that make them such a stalwart of the soil?

Hosta	
Species	*Hosta* spp.
Zones	3–9
Needs	☼ 💧
Soil pH	6.5–7.5
Size	1–6' wide

Hostas are considered hardy perennials in all but the coldest areas, dying back in the winter and popping up again in the spring. We eagerly start looking for their fingerling shoots to break the soil sometime around March. When the hostas start to emerge, most of the cold weather is behind us—and if it isn't, they'll tolerate a light frost and come back strong. We have found them to be quite resilient.

The many and varied types of hostas are the queens of the shade garden, although some have been specifically bred to tolerate the sun. Hostas come in all different sizes, from the little 'Mouse Ears' series to the giant cultivars like 'Big Daddy' and 'Humpback Whale'—which makes them suitable for any size space. Some 'Mouse Ears' hostas have leaves not much bigger than a silver dollar. They grow 5 to 6 inches tall and are not much bigger in diameter than a dinner plate. The gargantuan hostas like 'Humpback Whale' will grow to spread nearly 7 feet wide and have enormous leaves reaching

up to 5 feet tall. It's easy to see why hostas are so popular; they're so vastly different that it is easy to become quite devoted to collecting different colors, shapes, and sizes.

All hostas originate from Asia, although there is some contradiction about whether they are mainly from China or Japan. Hostas have been popular in the Western world since the eighteenth century, when they first found their way to Paris and London. Although there are now hundreds of different cultivars of hostas, they really haven't changed much.

Most superstores and home improvement stores sell hostas in the gardening section, making them one of the more readily available garden additions. Greenhouses and gardening stores carry them in stores and online, often with more variety available than chain stores. Specialist hostas can be ordered through specific hosta retailers, such as Hostas on the Bluff (hostasonthebluff.com) or NH Hostas (nhhostas.com). Even Etsy features independent hosta growers, and we've been very pleased with the ones we have purchased online. The run-of-the-mill hostas are fairly inexpensive, although the newer fancier strains can be pricey.

In addition to being many and varied, hostas are also quite versatile. They can be planted directly into the ground or put into containers—although it is best to do a bit of research and choose the smaller-leaf varieties when planting in pots. Hostas are hardy in USDA zones 3 to 9 and take very little care, but they're not without their quirks. They are prone to predators. My friends in Kentucky found out the hard way that hens love to eat them, while another friend on the West Coast says the deer don't give the hostas a chance.

Pests and Care

We haven't really had much issue with pests (which is remarkable, as the deer roam right through the yarden) other than some slugs munching on the younger plants. We took care of that by making slug traps; the easiest is half a grapefruit rind placed upside down in the hosta bed overnight. The slugs will crawl into it, and the whole thing can be disposed of the following

morning. A beer trap is slightly more successful: Bury a container in the hosta bed nearly level with the top of the soil. We use a wide-mouth mason jar, but an old cottage cheese carton or margarine tub will work just fine. Fill the trap about half full with a light beer. Slugs seem to prefer lagers and pilsners over bocks and stouts.[45] Empty the contents, rinse out the container, and refill it. Simple, inexpensive, and quite effective! It's best not to use salt as a deterrent around the hostas; it's too harsh for the plants and repeated use will eventually kill them.

Voles nibbling on the roots can be a problem with hostas, but we've not been bothered by them. We've not seen much insect infestation, either, and I wonder if it is because we companion plant the hostas with other shade-loving perennials. They're not far from daylilies (*Hemerocallis*), they're interspersed with coral bells (*Heuchera sanguinea*), and we occasionally will put *Coleus* (a shade-loving annual) in the same bed.

Apart from deer and slugs, hostas may also be prone to fungal infections. These are easily controlled by spraying the plant with a homemade spray. We use a solution made from a tablespoon each of dishwashing liquid (we prefer Dawn), baking soda, and apple cider vinegar (no need to get an expensive one) dissolved in a gallon of water. Sprayed on the leaves, this seems to do the trick. Repeat after it rains. Commercially prepared copper fungicide spray can also be used.

When watering hostas, it's best to do it from a hose or watering can that has a spout. Even though hostas grow outside and will get wet foliage when it rains, they don't particularly like wet leaves. Watering from a trickling hose or a can with a spout means that the water can be applied at ground level, keeping the leaves as dry as possible. This deters fungus from growing. Hostas are fairly drought tolerant; when they're newly planted, water them twice a week, but once they're established, just give them a drink when there's little rainfall—once a month should be adequate. Plants in pots will need more watering than hostas planted directly into the ground.

Mulch Matters

Even though hostas are fairly drought tolerant, their roots need to be kept moist. Mulch is their friend! However, the type of mulch used matters. Hostas are not fond of the commercial chipped wood. They prefer something more decomposed, like well-rotted vegetation or aged manure.

When planting hostas, dig deep, then add composted matter when situating the new plant. The reason they are drought tolerant is because—when done correctly—their deep root system is kept constantly moist. Composted material helps with this.

Hostas thrive in many different locations. They're fantastic in shade gardens, but they'll tolerate partially sunny spots too. Some hostas—usually the variegated ones or the ones with lots of gold on their leaves—are full sun tolerant, but a general rule of thumb is shade to partial sun. They're great for perennial gardens, as they'll come back bigger and better with each year, and they're easily divided. Over time, a large hosta garden can be established. They make beautiful borders for shaded paths and walkways and require very little maintenance. Just ensure that they're planted far enough from the footpath that their leaves won't be damaged in passing, and take care if using a Weedwacker or string trimmer not to get too close to them. Hostas are good in container gardens too, as mentioned previously. Ensure the size of the pot is adequate for the mature plant.

The decomposed mulch around the hostas helps keep in moisture and also helps feed the plants. However, should fertilizer be needed, something simple like fish emulsion or animal "poop tea" (just what it sounds like; we used a bit of horse poop dissolved in water) should be ample. If rotting fish or liquid poop isn't appealing, then a manufactured 10-10-10 pelleted fertilizer may be added to the soil in spring, just before the hostas emerge. Hostas also like Epsom salts, which are a magnesium-based chemical compound ($MgSO_4 \cdot 7H_2O$), and hostas love magnesium. This can be fed to the hostas at a ratio of two tablespoons of Epsom salts dissolved in a gallon of water. Feed the roots, not the leaves!

Taper off fertilizing in late summer. This is when the plants will be

naturally dying back; it's not a good idea to stimulate growth at this time. There's no need to do anything once the plant has withered. Leave it over the winter, and rake the remains of the leaves in the spring, before adding any fertilizer or fresh mulch. If you're lazy gardeners like we are, leave the leaves! Provided they are not diseased, they make a good mulch for the plant. We've not noticed anything detrimental in doing this, and we've been doing it for years.

Hostas grow for many years without needing to be divided. Division is the best way of propagating hostas, and many in our yarden have come from splitting ours and trading with others for different varieties. I love walking under the trees and remembering who gave me which plant. The best times to divide hostas are in the autumn after the foliage has started to die back and early in the spring when the shoots first emerge. To divide, take a spade to the hosta and slice off the shoots all the way down below the surface of the soil so that the roots are split, or you can dig up the whole plant, separate it, and replant the segments. We've always just severed the mother plant when we make divisions in the spring.

Leaves and Flowers

Hostas are usually grown for their foliage. Their greenery will take over jaded areas when planted alongside early spring flowering bulbs. Their colors range from the palest of lemon yellow to a deep grass green to shades of peacock. There are even some with rusty or pink tinges to their leaves! Some are solid colors and some are variegated (usually green and gold or green and cream). One of my favorites—a fairly new edition that took a year or two to get established—is 'Designer Genes,' a rather muted chartreuse color with deep red stems. The beautiful 'White Feathers' hosta is nearly a butter yellow, while 'Abiqua Drinking Gourd' is a deep blue-green. Interestingly enough, it is a waxy coating on the leaves that gives blue hostas their hue!

Hostas do flower, though, and the flowers are often underrated. Most hostas will bear spikes of light purple flowers in mid- to late summer,

although available colors range from white to pink and lavender to mauve. Each plant can produce up to ten stalks, or scapes, of flowers, so the blooms will last for quite some time. We just let our hostas flower, but flowering does mean that the plant is sharing its energy between the flower stalks and the leaves. We've found that the more mature the plant is, the bigger and better the blooms it bears.

If you want to encourage leaf production, then nip the flower stalks off close to the crown of the leaves as soon as they start to emerge. (Think rhubarb—our rhubarb is not allowed to flower, so the energy goes into the stalks we use for culinary purposes.) Hostas are not considered to be pollinators, and we haven't seen bees and hummingbirds clustering around them like we do with my comfrey—but I did hear somewhere that they might be a fallback food source when other flowers are scarce, so we let ours flower, just in case!

Some hostas are more fragrant than others, and this is another reason to let the flower scapes bloom. Who doesn't like to be greeted by a sweet scent in the garden? The sweeter the blooms, the more likely the hosta will attract pollinators. If you are planting hostas for this purpose, be sure to select plants that have the more attractive scents—and remember that they'll attract wasps and other nectar seekers too!

Hostas in the Kitchen

That's right! Hostas are actually *edible*. It seems that, until recently, hostas were a food and medicinal crop, not just ornamental. According to Alan Carter, author of *A Food Forest in Your Garden*, hostas are called "*sansai or* 'mountain vegetables'" in Japan and "are considered to be very strong in vitality."[46]

Any hosta is edible. I have found no evidence to contradict this, but if there is any doubt, choose a well-established cultivar. The time for harvesting is in the spring, when the emerging leaves are still rolled up like scrolls. Hostas are high in minerals, particularly magnesium, and contain more nutrients than asparagus. The leaves become more bitter as they age,

so the young shoots are the best. Use them in salads or make wraps with them. The shoots can be sliced and stir-fried like leeks or treated to a bit of sautéing similar to sugar snap peas or young kale.

Hostas can also be roasted. Toss the tightly curled leaf shoots in a bit of oil with seasonings and roast them in a moderate to hot oven (350–400°F). Whether you roast or pan fry them, remember that hostas will taste best when they are slightly undercooked and crunchy rather than soggy.

The flowers from the hosta are also edible. They make a dainty decoration to seasonal salads, or perhaps they could be sugared to decorate cakes and cookies. The oniony taste that is faintly present in the leaves does not seem to affect the flowers. I've used violets and nasturtiums and other flowers in both savory and sweet dishes in the past (squash flowers stuffed with mushroom pâté are delicious), and I'm looking forward to experimenting with hosta flowers.

There is one note of caution, though: If you're planning on eating your hostas, don't share them with your canine companions! All parts of the hosta are toxic to dogs—and cats too, for that matter. If you're worried about your pet getting into your hosta bed and snacking on the leaves, spray the foliage with a solution of lemon juice and water as a deterrent. In eighteen years, we've never had an issue with accidental munching; the animals seem to naturally sense what is toxic to them in the yarden and leave it alone.

Hostas in the Medicine Cupboard?

As well as being an unexpected food source, the hosta has a long history in herbal medicine. Now, let me preface this by saying that what might not be healing to *us* might be just what a cow or a deer might need. Just as I've never experienced my pets ingesting anything in the yarden that was toxic to them—they seem to intuitively know what to avoid—there is evidence that animals intuitively know what they need to forage in order to be healthy. In his book *Ultra-Processed People*, Chris van Tulleken cites more than one example of how grass-fed cows will intuitively graze different

foliage in order to get what they need.[47] Perhaps it is why the deer and hens like my friends' hostas so much. Maybe there is something lacking in their diet.

Hostas aren't ranked high on the superplants of herbal medicine—they're actually quite low. But according to the Royal Society of Chemistry's journal, hostas have been used in medicine for over 500 years, with the flowers being used for sore throats and fevers. The leaves were used to soothe inflammation and the roots for inducing vomiting.[48]

Let's Grow!

Hostas do great when planted with each other, and our hosta bed consists of many hostas in different color combinations and sizes. We have the little miniatures nestled among the huge solid green ones; we have ones whose dark green leaves have ivory edges and some that are dappled with gold. We're fortunate to have some old trees under which we can keep throwing hostas into the ground, but if you're planning a hosta container garden, keep size in mind!

Hostas do well with other shade-loving plants. We've got several different coral bells (*Heuchera*) interspersed with our hostas from the deepest of purple to the fairest of salmon pink, and the contrasting colors play very nicely together. Other suitable hosta companions include *Astilbe*, bleeding heart (*Lamprocapnos spectabilis*), lungwort (*Pulmonaria*), and flowering onion (*Allium*). We've also got comfrey growing in with our hostas; the leaves are similar and the plants seem to cohabit nicely.

All in all, hostas are easy to grow given the right conditions and easy to care for when their basic requirements are met. They're a useful additive to the garden, not just as a shade-loving perennial but also when it comes to potential culinary delights. With such an established presence and delightful color combinations, what's not to love about the humble hosta?

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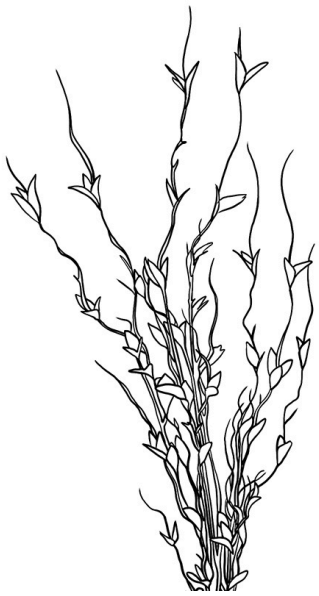
[contents]

Willow

Natalie Zaman

A striking feature of my childhood home was a pair of weeping willow trees in the back garden, planted when my parents moved to New Jersey in the 1960s. I didn't live in that house long enough to cultivate memories of those trees, but willows are a favorite for many reasons. With their thick, soft, green and golden curtains, willows were magical hiding places. Later, I found them in tumbled-down cemeteries, as shady resting places and carved in tombstones. And I saw them in my mind's eye through music and art:



Willow	
Species	*Salix* spp.
Zones	4–9
Needs	☼☼☼ 💧💧💧
Soil pH	5.5–7.0
Size	up to 80'

- Old Man Willow and the army of watchful willow trees encountered by Frodo, Sam, Merry, and Pippin in the Old Forest in J. R. R. Tolkien's *The Fellowship of the Ring.*
- Frank Sinatra singing "Willow, Weep for Me."
- The many descriptions of the English countryside in *The Wind in the Willows*. The very title of this book is a statement to the ever-present voice of nature (although in this story, they're called "osiers").

While all trees are undoubtedly special, willows (weeping or not), with their emotionally charged symbolism and familiarity, pluck at human heartstrings. To me, the sight of a willow tree brings feelings of peace and serenity, secrets and solace—but their variety is rich and broad and full of

surprises.

Move over, butterfly bush! Willows are butterfly and moth friendly, attracting eastern and western swallowtails, red-spotted purples, dreamy duskywings, monarchs, and more!

Do All Willows Weep?

Even if some willows look like they may burst into tears, no, not all willows are weepers. The graceful silhouette of a weeping willow is the most recognizable of the *Salix* genus, but it's only one of over 350 species of this plant, which can be a towering, tall tree or a ground-covering shrub. Willows are found the world over, and they thrive in a variety of environments. We can't delve into the hundreds of kinds that exist, but let's look at a handful:

Weeping Willow: The most popular and easily recognized type of willow, weepers live longer in our memories than they do on Earth. Weeping willows live an average of about thirty years and can reach fifty years with care. They like super moist, slightly acidic soil and can quickly reach heights of up to 80 feet; weeping willows grow about 10 feet a year once planted.

Pussy Willow: There are several willows that go by "pussy willow," but there is one true pussy willow, and it's the one with the bunny-soft catkins used in seasonal floral displays. Other pussy willow imitators, such as the goat willow, grow more like a thicket, while a true pussy willow is more tree than shrub. While they only reach about 25 feet in height, their furry-budded branches grow from a single stem.

'Dickey Meadows': 'Dickey Meadows' may sound like a movie character—but surprise! It's a willow variety that's widely used for making baskets.

Some willows, including weepers, aren't good for basketmaking, as their wands become brittle as they grow. Still, you must soak 'Dickey' willow wands before weaving baskets.

Arizona Willow: Willows are watery plants, but some can thrive in desert conditions. The aptly named Arizona willow is found in its name state and throughout the Southwest. A shrub with shiny leaves, its main "predators" are grazing livestock and other hoofed creatures.

Dappled Willow: And what about a flowering willow? Native to Asia and parts of Russia, the dappled willow bears pink and white flowers, is more shrub than tree, and is perfect for rain gardens.

With all this variety, what makes a willow a willow? Look for these characteristics, which are typical of most trees in the *Salix* genus:

- Long, slender, pointed leaves, some with teeth along the edges
- Long, slender twigs
- Bark with watery sap that has high salicylic acid content (the same found in many skin care products)
- Roots that are big, tough, and aggressive
- Fast growth, capable of doubling in size in the first year they're planted and continuing to reach for the sky after that

Planting and Caring for a Willow

Which willow is right for you? Before installing any tree or plant, it's wise to do a little homework: Think of the climate where you live. Most willows do well in climates that are temperate, but as we've seen, there are varieties that can live quite well in other environments. See the resources provided at the end of this piece to assist you in choosing a willow tree, and ask experts at your local garden center to advise on what will work well for your area.

As a rule, most willows like moist but well-drained soil. They grow to be quite tall and wide too, so make sure you have the space to accommodate them. Remember to think about the tree's roots as well as its canopy;

willows have aggressive root systems and can cause severe damage to plumbing, foundations, and other underground utilities. To mitigate this issue, you can install root barriers (like those used to control bamboo, which can also quickly take over an area), but do note that because of this, some places consider the willow to be invasive. Plan where you will place your willow carefully and check to make sure that willows are permissible in your area.

Once you have selected your willow and are ready to plant it, keep in mind that the best time to install your new tree is when it's dormant (not blooming or dropping its leaves). Some sources say that January to March is the best time to plant a willow; late fall and early spring are also advised. Willows can tolerate the shade, but they really love the sun, so choose an open spot for your tree or shrub. The top of the root ball for your willow should be level with the ground, but the hole should be twice as wide as the ball. Willows also love wet but not soaking soil. Install your trees where the soil is well drained and keep the soil moist.

Willow is well-known for containing salicylic acid, useful in pain relief and and as an antiseptic, but it can also be used to make a homemade rooting hormone for propogating cuttings. Water the cuttings with an infusion made from water and willow twigs.

Once your tree is in the ground, and as it grows, keep an eye out for blights and pests: Willow trees are susceptible to willow scab (a fungal infection) and black canker (look for dark spots on the tree's bark). Sadly, these conditions often accompany each other. Aphids will attack willows, as will the willow borer beetle (branches infested with this pest can look swollen!). Bagworms and gypsy moths are also fond of willow leaves and branches for food and nesting and can decimate a tree. Birds, ants, and wasps are predators for these pests, but you can do your part by pruning

back dead or infected branches.

Death. Life. Love.

Besides their aesthetic, the willow comes with some hefty symbolism and history—one of the reasons it's a favorite tree! Let's start with the obvious. The leaves of the willow, cascading from long and trailing branches, are reminiscent of tears, hence, the "weeping" willow. Here in the United States, willows are carved on countless tombstones; it's long been a symbol of death and mourning. But no need for tears! Look into the symbolism a bit further, and you'll find it's more uplifting than meets the eye.

Have you ever seen the Blue Willow china pattern? Originating sometime in the eighteenth century, this Chinoiserie transferware scene on plates, cups, and teapots depicts the story of two lovers who defy social restrictions to be together. (She was rich, and he was poor.) It was under the willow tree, depicted in the center of the image, where the woman received a message from her lover and knew that he was near. Willows are also romantic!

Ancient Greek mythology links the willow to Persephone, the queen of the underworld, whose story illustrates the seasons and the cycle of life and death—which *always* returns to life. Willows may bring tears, but they bring hope too! In Chinese and ancient Celtic lore, willows symbolize immortality and resiliency, due to their wonderous regenerative properties, growing back when they're cut. That said, just as willows symbolize death and mourning, they can also symbolize life—new life.

As winter ends and just before spring begins, pussy willow catkins magically appear on long, slender branches. Named "pussy willow" for its downy, silver-gray buds, this member of the *Salix* genus is one of the first harbingers of spring. Pussy willows are woven into seasonal wreaths and

blessed in churches at Eastertide. In Poland, some churches substitute palm fronds with pussy willow branches on Palm Sunday. In China, pussy willows are hung with gold and scarlet ornaments to celebrate the new year; the buds are symbolic of prosperity.

Making a Living Willow Grotto

While I scrolled through Instagram, it was my good hap to come across Luke the Wizard, an Etsy seller who specialized in Ents. A lifelong fan of J. R. R. Tolkien, I was intrigued by the wizened faces carved into thick, pruned willow branches. It was a stick with a face—but it was alive, and when placed in a jar of water, it sprouted leaves! And roots! Weeks later, I was able to transfer "Quickbeam" into a pot. As he grows, bark will cover his face, but it was a lovely way to embrace the personality of this tree. Willow is very versatile and resilient in this way.

Willow has been a material for creating baskets for thousands of years (the folks in Somerset, UK, have been making baskets from willow wands since Roman times!). And while willow wands (properly prepped) can make these as well as nifty sculptures, my experience with Quickbeam prompted me to look beyond the basket. You can make living items and even structures using living willow branches. Let's try creating a willow grotto. This structure can be made large enough to accommodate seating or small enough to frame a piece of statuary, depending on your needs. If you have a pet who has crossed the rainbow bridge, a willow grotto is a lovely canopy for their resting place.

To create a living willow structure, you will need an outdoor, open space, so if you are constructing in a communal area, make sure you get the appropriate permissions and permits! Create your willow grotto during the dormant season.

Before you plant, do some planning. Where do you want to place your grotto? Remember, willows like sun and well-drained soil. Once you've decided how large you want to make your grotto and where it will live, map out the base shape of your structure—a ¾ semicircle—on the ground with

the twine. This will also assist when you install your willow branches. Keep the size of what you wish to accommodate in mind; you may even want to place the items in the space (e.g., a small table and two chairs, a garden statue, etc.).

You will need:

Awl or other implement like a long screwdriver to create holes for the willow rods

Living willow branches, cut during the dormant season. The rods will be between 7 and 12 feet in length. How many you'll need will depend on how large you want your grotto to be. Some willow types that are good for making living structures are Irish Red, 'Continental Purple', and 'Eugene'.

Twine

Floral wire

Pruning sheers

1. Using the awl or screwdriver, make a hole for each rod at least 12 inches deep. The number of holes you make depends on the size of your grotto. Each rod will be about 5 inches apart.
2. Once you've made the holes, starting clockwise, insert a rod in every other hole. When you insert the rod, do so at an angle (the Royal Horticultural Society recommends a 45-degree angle).[49]
3. Once you've inserted the rods clockwise from end to end, repeat the process from a counterclockwise direction, angling the rods so that they lean toward each other. The rods will make a harlequin or checkerboard pattern. Of course, you can try more complicated or organic patterns (see the resources at the end of this piece for inspiration!), but we will focus on making a base with the wands and then training them as they grow.
4. Make sure that each willow rod is secure in its hole before moving onto the next step.
5. You'll need a partner for this part of the project. Using the twine or

floral wire, bind the tops of the willow rods together so that the structure looks onion shaped.

6. Stabilize your structure. The places where the rods cross may graft together, but you can use twine or garden wire to secure the branches to add stability as the structure grows.
7. Keep the grotto well-watered. Trim back branches and sprouts in the grotto opening.

Next, watch and wait! Living willow structures take a little time to establish and fully develop. But don't weep! Before long, your grotto will be a shady nook for resting, ruminating, and remembering.

Resources and Further Reading

Willow Tree Selection, Planting, Care and Feeding

8 Billion Trees breaks things down by state: Kilgore, Georgette. "10 Types of Willow Trees by State: Pictures, Map, Chart." 8 Billion Trees. March 7, 2024. https://8billiontrees.com/trees/types-of-willow-trees-by-state/.

Gardens with Wings has tips on attracting butterflies and birds with willows and other plants: Gardens with Wings. https://www.gardenswithwings.com.

SavATree has useful information on willow selection, growing, and care: "Willow Tree Varieties & Care." Accessed December 11, 2024. SavATree. https://www.savatree.com/willow-tree.

The United States Department of Agriculture's database has information on plant species, growth zones, and uses: PLANTS Database. USDA. https://plants.usda.gov/home.

Crafting and Building with Willow

Growing with Nature provides videos with step-by-step instructions for growing and making with willow from an ecologist and homesteader: Daron. "7 Wonderful Uses for Willow on Your Property." *Growing with Nature* (blog), July 8, 2019. https://www.growingwithnature.org/using-willows/.

Ohio artist Howard Peller creates everything from baskets to furniture to an entire labyrinth and outdoor chapel with willow. Visit his website for an extensive look at the variety of willows and what you can make with them: Living Willow Farm. www.livingwillowfarm.com.

The Royal Horticultural Society has step-by-step instructions and troubleshooting tips for building living willow structures: "Living Willow." Royal Horticultural Society. Accessed December 11, 2024. https://www.rhs.org.uk/garden-features/living-willow.

Willow sculptures of animals and human figures can be found at Willows Nursery in the UK: "Willow Project Gallery." Willows Nursery. Accessed December 11, 2024. https://willowsnursery.co.uk/living-willow/willow-weaving-gallery/.

Willows Nursery also offers information on willow varieties and how to prep willow wands for

weaving: “Storage, Preparation and Use of Willow for Weaving Projects.” Willows Nursery. Accessed December 11, 2024. https://willowsnursery.co.uk/living-willow/dead-willow-weaving/storage-preparation-and-use-of-willow-for-weaving/.

[contents]

Gardening Resources

Learning to Garden in an Ever-Hotter World

JD Walker

We hear it every day on a variety of news sources: The Earth is heating up faster than ever! Record heat is predicted everywhere even as some areas swelter through drought. Ozone depletion. Rising sea levels. Melting polar ice caps. It's enough to send a gardener scurrying for an underground bunker.

Let's face it—we are well past the point of arguing whether climate change is a reality. Still, the steady drumbeat of negative information can feel overwhelming, especially to a single individual who wonders, "What can I do to stop the ice caps from melting or keep the world from overheating?!"

We can start by understanding what is going on in our own backyards. Some of the news out there is alarmist. Some of it is helpful, if you understand the context. Knowing which is which is the first step to learning how to garden successfully in a changing climate.

Natural vs. Human-Driven Causes

Since the 1960s (at the very least), environmental advocates have been warning about manmade changes to the environment beyond the mountains of trash we see and the chemicals we find in drinking water. Humans are a hot mess—literally. The Royal Society, a fellowship of scientists based in

London, points out that humans have been contributing more than their fair share of greenhouse gases to the atmosphere since the Industrial Revolution.[50] Greenhouse gases are thought to be a major cause of global warming.

Greenhouse gases aren't a bad thing in moderation. Gases like methane, carbon dioxide, and nitrous oxide exist naturally in the global environment, according to sources like the Environmental Protection Agency (EPA).[51] Some scientists speculate that without the warming layer of gases in Earth's atmosphere, humans may never have had the chance to evolve.

But too much is bad news even when it comes from natural sources. Scientists at the University of Utah found that 58 million years ago during the Paleocene era, volcanic activity made the Earth's atmosphere a toxic soup wherein methane predominated. The event "resulted in a major extinction event that wiped out a lot of deep marine life." As it turns out, this allowed for greater diversity among the existing mammals over time, so our far distant ancestors (and we) caught a break. The problem, according to researchers, is that human-driven climate change due to deforestation, urbanization, and industrial pollution is happening "100 times faster than what transpired at the end of the Paleocene."[52]

It's Complicated

Trying to wrap our heads around the problem of climate change is difficult. All is not what it seems.

Most recently, gardeners were surprised when the US Department of Agriculture (USDA) released an updated Plant Hardiness Zone Map in November 2023. The last update was published in 2012. Many saw it as proof of climate change. That isn't exactly true, but it does illustrate how complex the problem of defining climate change is.

Gardeners are familiar with this resource. It helps them determine which plants are most likely to survive the winter in their location by averaging the lowest temperature experienced over winter in any given area over a

thirty-year period. The information is then translated into 10-degree Fahrenheit zones and further divided into 5-degree Fahrenheit half-zones.

To say that a location is in a particular zone means the average lowest temperature during the winter there falls within a certain 10-degree range. For example, I live in central North Carolina in a spot that falls in zone 8. Zones are further divided into sub-zones of 5-degree ranges. I'm in zone 8a. To be classed as zone 8a means the average lowest temperature in my area tends to fall between 10 and 15 degrees Fahrenheit in the winter.

This is a change for people in my area. In the 2012 map when the county fell into zone 7b, the average lowest temperature was expected to be in the 5-to-10-degree Fahrenheit range.

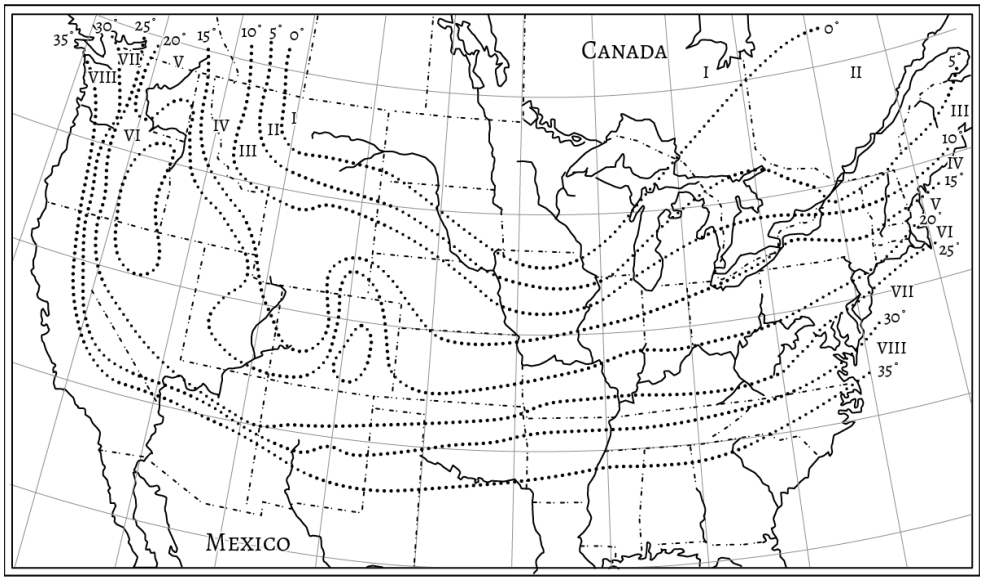
The new map doesn't mean my garden will definitely experience a winter low of 10 degrees or that the temperature won't slip even lower at some point during the winter. Everyone has heard the stories of (or experienced) prolonged stretches when the thermometer never climbed to the freezing mark during the day and hovered at 0 degrees or below for several nights in a row. I can also recall a few winters that weren't so cold—times when, despite a few nippy days and nights, the overall winter was relatively mild.

Researchers have been very keen to point out that the new map is not an indication of climate change. The average lowest winter temperature in any region is but one factor in the many that go into determining the extent of global warming. For example, researchers have noted that the new map indicates that the Midwestern parts of the country have warmed more than the Southeast. There is more to understanding climate change than just the lowest average winter temperature.

Just as one can't tell the general weather pattern by experiencing one season in an area, the new map can't be used as a solid harbinger of what will happen this winter or the next or the next. The average lowest temperature indicated by the map is more of a cautionary note and less of a guarantee.

For an interesting history of the development of plant hardiness maps over the last century, read "An Illustrated History of America's Plant Hardiness Zones" by Tom Packer.[53] Below is a re-creation of the first plant

hardiness zone map, created in 1927. The map was compiled by Dr. Alfred Rehder of the Arnold Arboretum at Harvard University. Compare it to the map on page 189 of this almanac, released in 2023.



The Impact

There is a relatively well-known saying that weather is local, climate is global. The summer of 2024 in the US was the hottest on record since those global records began in 1880, according to NASA.[54] However, due to a prolonged cooler-than-normal start to the summer, I personally experienced less of a heat-stressed summer overall. This was well-reflected in the electrical bills I paid to cool my small home.

This doesn’t mean the world isn’t warming faster than normal. Weather is a brief moment in time. Climate is an accumulation of moments that trend in a particular direction, leading to multiple problems.

This includes higher average temperatures, an increase in wildfires, stronger storms, and increased rainfall that causes major flood events. For the average person living with chronic health problems like asthma and heart disease, the weather-related stress can cause greater complications in daily living and higher mortality rates. The demands placed on governments to address problems caused by climate change are straining and outright

breaking budgets.

In the garden, these conditions lead to paradoxes. The mechanics of climate changes mean days and months of endless rain that cause flash flooding and erosion. However, the same geographic location can also experience flash droughts. A flash drought is “when low precipitation is accompanied by abnormally high temperatures (e.g., heat waves), high winds, and/or changes in radiation,” according to NOAA. This can exacerbate an existing drought or be a short-term event that unfortunately usually occurs at critical points in the growing season.[55]

Climate change compounds other problems in the landscape. Insect pests thrive in these conditions. Ticks and mosquitoes, along with the diseases they help spread, are of special concerns. But scientists also warn of aquatic dangers, as standing water from excessive rains causes spikes in the populations of water-borne pathogens, and excessive run-off results in toxic algae bloom.

Even some plant pests seem to benefit from increased CO_2 levels in the atmosphere. In a 2006 study conducted by Duke University, researchers found that poison ivy (*Toxicodendron radicans*) grows faster and is more toxic when exposed to elevated levels of the greenhouse gas.[56]

What’s a Gardener to Do?

According to NASA, “Scientists have high confidence that global temperatures will continue to rise for many decades, mainly due to greenhouse gases produced by human activities.”[57]

There are steps to take to make changes to the way we garden, regardless of where we do that gardening. We may need to change the plants we use in the garden. Old faithfuls that used to produce reliably for us may now struggle. They may require more water, more insecticides, or more fungicides to maintain their production. This is true in farming as well as in the home garden.

For example, just south of my location, farmers used to make a good

living growing and selling peaches. Peaches, like a lot of stone fruits, need a certain period of cold dormancy or chilling hours. Cold dormancy is the number of hours a plant needs to develop leaves, flowers, or fruit. A chill unit is an hour of air temperature between 32 and 45 degrees Fahrenheit, minus all hours above 60 degrees. If the area's average winter temperature has increased, it could be assumed that the number of chilling hours has decreased.

Over the years, I've watched those peach orchards to the south decline as the commonly planted 'Reliance' and 'Contender' peaches stopped producing due in part to a decrease in the number of chilling hours as temperatures in our region rise.

Rather than deny the reality of a hotter climate, we need to adapt. Fortunately, plant families have many members that have different growing requirements. In the example above, farmers in my area may find that it is time to try 'Norman' or 'Junecrest' peaches, which need fewer chilling hours.

If the plants we traditionally used in the flower bed can't take the heat, we can introduce newcomers. For instance, if my garden won't reliably support yellow alyssum (*Aurinia saxatilis*), which likes to live in zones 5 to 7, I can switch to life everlasting (*Helichrysum orientalis*), which lives comfortably in zones 6 to 9.

There are other changes we can take advantage of. Plants that may have been considered "half-hardy" in your area may now have a better chance of survival. An example in my area is tall verbena (*Verbena bonariensis*). In the past, I have lost this plant after a season or two due to one of our cold winters. I could reasonably expect it to have a better survival rate under our current conditions.

Milder winters may mean less focus on protective tree wraps and plant coverings. And while it is true as some have pointed out that milder winters may mean more damaging insects survive to plague the gardener next season, it is also true that more predator insects will likely survive to help curb those populations. Cooperative extension agents frequently point out that predator insects are some of the first to go in cold winters.

Are We Throwing In the Towel?

All this advice may sound like we're giving up.

"Oh well, we can't do anything about climate change. Might as well enjoy it."

Nothing could be further from the truth. Acknowledging the changes in our landscape and adapting to those changes can actually help address climate change. Mulching plants is no longer a nicety. It can conserve water, reduce plant stress (which can be a welcome sign for insect pests), and keep troublesome weeds at bay. Keeping plants healthy means using fewer commercial supplements that can be a problem during heavy rain events when they wash into nearby water sources.

We need to stop fighting to use plants that are no longer suited to our area, wherever that is. By utilizing plants better suited to our environment, we can cut water usage, reduce or eliminate our reliance on insecticides, and reduce our carbon footprint. Reducing or eliminating lawns is a classic example. In recent years, some cities in California actually paid homeowners up to $6 a square foot to remove turf and replace it with drought-tolerant plants, mulch, and rocks. Supporters of the program say such measures will save enough water through 2050 to supply the state's entire population for a year.

Can one person remove excess greenhouse gases from the atmosphere? Of course not. Will one person modifying his or her planting habits keep the polar icecaps from melting? Very unlikely. But lots of people taking small steps can make a difference. Gardeners have lots of quaint sayings that can have application to larger issues in life. One is "Bloom where you are planted." Much in life is beyond our control. But rather than feeling helpless, we can do what we can in our own environment to ensure that future gardeners have a chance to bloom in their own time.

What Can I Do?

The United Nations has recommendations for people who want to do as much as possible to slow climate change in their own area:

- Reduce energy usage at home by using LED lighting, using energy-efficient devices, and making your home energy efficient with proper insulation.
- If possible, change your home's energy source to one that is clean and renewable.
- Walk, bike, or carpool if possible.
- Reduce, reuse, repair, and recycle (in that order!) electronics, clothes, plastics and other items.
- Plant native species that may require less water and upkeep.
- Shop wisely and support industries and businesses that are committed to having a small carbon footprint.[58]

Resources

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[contents]

Companion Planting Guide

Group together plants that complement each other by deterring certain pests, absorbing different amounts of nutrients from the soil, shading their neighbors, and enhancing friends' flavors. This table of herbs and common garden vegetables offers suggestions for plants to pair together and plants to keep separated.

Plant	*Good Pairing*	*Poor Pairing*
Anise	Coriander	Carrot, basil, rue
Asparagus	Tomato, parsley, basil, lovage, Asteraceae spp.	
Basil	Tomato, peppers, oregano, asparagus	Rue, sage, anise
Beans	Tomato, carrot, cucumber, cabbage, corn, cauliflower, potato	Gladiola, fennel, *Allium* spp.
Bee balm	Tomato, echinacea, yarrow, catnip	
Beet	Onions, cabbage, lettuce, mint, catnip, kohlrabi, lovage	Pole bean, field mustard
Bell pepper	Tomato, eggplant, coriander, basil	Kohlrabi
Borage	Tomato, squash, strawberry	
Broccoli	Aromatics, beans, celery, potato, onion, oregano, pennyroyal, dill, sage, beet	Tomato, pole bean, strawberry, peppers
Cabbage	Mint, sage, thyme, tomato, chamomile, hyssop, pennyroyal, dill, rosemary, sage	Strawberry, grape, tomato
Carrot	Peas, lettuce, chive, radish, leek, onion, sage, rosemary, tomato	Dill, anise, chamomile
Catnip	Bee balm, cucumber, chamomile, mint	
Celery	Leek, tomato, bush bean, cabbage, cauliflower, carrot, garlic	Lovage
Chamomile	Peppermint, beans, peas, onion, cabbage, cucumber, catnip, dill, tomato, pumpkin, squash	
Chervil	Radish, lettuce, broccoli	
Chive	Carrot, *Brassica* spp., tomato, parsley	Bush bean, potato, peas, soybean
Coriander/cilantro	*Plant anywhere*	Fennel
Corn	Potato, beans, peas, melon, squash, pumpkin, sunflower, soybean, cucumber	Quack grass, wheat, straw, tomato
Cucumber	Beans, cabbage, radish, sunflower, lettuce, broccoli, squash, corn, peas, leek, nasturtium, onion	Aromatic herbs, sage, potato, rue
Dill	Cabbage, lettuce, onion, cucumber	Carrot, caraway, tomato
Echinacea	Bee balm	
Eggplant	Catnip, green beans, lettuce, kale, redroot pigweed	
Fennel	*Isolate; disliked by all garden plants*	

Plant	*Good Pairing*	*Poor Pairing*
Garlic	Tomato, rose	Beans, peas
Hyssop	*Most plants*	Radish
Kohlrabi	Green bean, onion, beet, cucumber	Tomato, strawberry, pole bean
Lavender	*Plant anywhere*	
Leek	Onion, celery, carrot, celeriac	Bush bean, soy bean, pole bean, pea
Lemon balm	*All vegetables*, particularly squash, pumpkin	
Lettuce	Strawberry, cucumber, carrot, radish, dill	Pole bean, tomato
Lovage	*Most plants*, especially cucumber, beans, beet, *Brassica* spp., onion, leek, potato, tomato	Celery
Marjoram	*Plant anywhere*	
Melon	Corn, peas, morning glory	Potato, gourd
Mint	Cabbage, tomato, nettle	Parsley, rue
Nasturtium	Cabbage, cucumber, potato, pumpkin, radish	
Onion	Beets, chamomile, carrot, lettuce, strawberry, tomato, kohlrabi, summer savory	Peas, beans, sage
Oregano	*Most plants*	
Parsley	Tomato, asparagus, carrot, onion, rose	Mint, *Allium* spp.
Parsnip	Peas	
Peas	Radish, carrot, corn, cucumbers, bean, tomato, spinach, turnip, aromatic herbs	*Allium* spp., gladiola
Potato	Beans, corn, peas, cabbage, eggplant, catnip, horseradish, watermelon, nasturtium, flax	Pumpkin, raspberry, sunflower, tomato, orach, black walnut, cucumber, squash
Pumpkin	Corn, lemon balm	Potato
Radish	Peas, lettuce, nasturtium, chervil, cucumber	Hyssop
Rose	Rue, tomato, garlic, parsley, tansy	*Any plant within 1 ft. radius*
Rosemary	Rue, sage	
Sage	Rosemary	Rue, onion
Spinach	Strawberry, garlic	
Squash	Nasturtium, corn, mint, catnip, radish, borage, lemon balm	Potato
Strawberry	Borage, bush bean, spinach, rue, lettuce	*Brassica* spp., garlic, kohlrabi
Tarragon	*Plant anywhere*	
Thyme	*Plant anywhere*	

Plant	*Good Pairing*	*Poor Pairing*
Tomato	Asparagus, parsley, chive, onion, carrot, marigold, nasturtium, bee balm, nettle, garlic, celery, borage	Black walnut, dill, fennel, potato, *Brassica* spp., corn
Turnip	Peas, beans, brussels sprout, leek	Potato, tomato
Yarrow	*Plant anywhere*, especially with medicinal herbs	

For more information on companion planting, you may wish to consult the following resources:

Mayer, Dale. *The Complete Guide to Companion Planting: Everything You Need to Know to Make Your Garden Successful.* Ocala, FL: Atlantic Publishing, 2010.

Philbrick, Helen. *Companion Plants and How to Use Them*. Edinburgh, UK: Floris Books, 2016.

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[contents]

Cooking with Herbs and Spices

Elevate your cooking with herbs and spices. Remember, a little goes a long way!

Herb	*Flavor Pairings*	*Health Benefits*
Anise	Salads, slaws, roasted vegetables	Reduces nausea, gas, and bloating. May relieve infant colic. May help menstrual pain. Loosens sputum in respiratory illnesses.
Basil	Pesto and other pasta sauces, salads	Eases stomach cramps, nausea, indigestion, and colic. Mild sedative action.
Borage	Soups	Soothes respiratory congestion. Eases sore, inflamed skin. Mild diuretic properties.
Cayenne	Adds a spicy heat to soups, sauces, and main courses	Stimulates blood flow. Relieves joint and muscle pain. Treats gas and diarrhea.
Chamomile	Desserts, teas	Used for nausea, indigestion, gas pains, bloating, and colic. Relaxes tense muscles. Eases menstrual cramps. Promotes relaxation and sleep.
Chervil	Soups, salads, and sauces	Settles and supports digestion. Mild diuretic properties. Useful in treating minor skin irritations.
Chive	Salads, potato dishes, sauces	Rich in antioxidants. May benefit insomnia. Contributes to strong bones.
Coriander/cilantro	Soups, picante sauces, salsas	Treats mild digestive disorders. Counters nervous tensions. Sweetens breath.
Dill	Cold salads and fish dishes	Treats all types of digestive disorders, including colic. Sweetens breath. Mild diuretic.
Echinacea	Teas	Supports immune function. May treat or prevent infection.
Fennel	Salads, stir-fry, vegetable dishes	Settles stomach pain, relieves bloating, and stimulates appetite. May help treat kidney stones and bladder infections. Mild expectorant. Eye wash treats conjunctivitis.
Garlic	All types of meat and vegetable dishes as well as soup stocks and bone broths	Antiseptic: aids in wound healing. Treats and may prevent infections. Benefits the heart and circulatory system.
Ginger	Chicken, pork, stir-fry, gingerbread and ginger cookies	Treats all types of digestive disorders. Stimulates circulation. Soothes colds and flu.
Hyssop	Chicken, pasta sauces, light soups	Useful in treating respiratory problems and bronchitis. Expectorant. Soothes the digestive tract.
Jasmine	Chicken dishes, fruit desserts	Relieves tension and provides mild sedation. May be helpful in depression. Soothes dry or sensitive skin.
Lavender	Chicken, fruit dishes, ice cream	Soothes and calms the nerves. Relieves indigestion, gas, and colic. May relax airways in asthma.

Herb	*Flavor Pairings*	*Health Benefits*
Lemon balm	Soups, sauces, seafood dishes	Soothes and calms the nerves. Treats mild anxiety and depression. Helps heal wounds.
Lemongrass	Marinades, stir-fries, curries, spice rubs	Treats all types of digestive disorders. Reduces fever. May reduce pain.
Lemon verbena	Beverages, any recipe asking for lemon zest	Calms digestive problems and treats stomach pain. Gently sedative.
Lovage	Soups, lovage pesto, lentils	Acts as a digestive and respiratory tonic. Has diuretic and antimicrobial actions. Boosts circulation. Helps menstrual pain.
Marigold	Soups, salads, rice dishes	Effective treatment of minor wounds, insect bites, sunburn, acne, and other skin irritations. Benefits menstrual pain and excessive bleeding.
Marjoram	Vegetables, soups, tomato dishes, sausages	Calms the digestive system. Stimulates appetite.
Nasturtium	Nasturtium pesto, salad dressings, salads	Strong antibiotic properties. Treats wounds and respiratory infections.
Oregano	Chicken, tomato sauces and dishes	Strong antiseptic properties. Stimulates bile production. Eases flatulence.
Parsley	Soups, stocks, bone broths	Highly nutritious. Strong diuretic action and may help treat cystitis. Benefits gout, rheumatism, and arthritis.
Peppermint	Desserts, teas	Treats all types of digestive disorders. May help headaches.
Purslane	Salads	Treats digestive and bladder ailments. Mild antibiotic effects.
Rosemary	Roasted red meats, potato dishes, grilled foods	Stimulates circulation. May stimulate the adrenal glands. Elevates mood and may benefit depression.
Sage	Chicken, duck, and pork	Relieves pain in sore throats. May help treat menstrual and menopausal disorders.
Spinach	Sautéed, soups, salads, spinach pesto, stuffed in chicken, ravioli	Iron-rich; supports healthy blood and iron stores.
Summer savory	Mushrooms, vegetables, quiche	Treats digestive and respiratory issues.
Tarragon	Chicken, fish, vegetables, sauces—“classic French cooking”	Stimulates digestion. Promotes sleep—mildly sedative. Induces menstruation.
Thyme	Soups, stews, tomato-based sauces	May treat infections. Soothes sore throats and hay fever. Can help expel parasites. Relieves minor skin irritations.

Herb	*Flavor Pairings*	*Health Benefits*
Wintergreen	Ice cream, candies, desserts	Strong anti-inflammatory and antiseptic properties. Treats arthritis and rheumatism. Relieves flatulence.
Winter savory	Beans, meats, vegetables	Treats digestive and respiratory issues. Antibacterial properties.
Yarrow	Salad dressings, infused oils	Helps heal minor wounds. Eases menstrual pain and heavy flow. Tonic properties.

[contents]

Gardening Techniques

Gardeners are creative people who are always on the lookout for the most efficient, interesting, and beautiful ways to grow their favorite plants. Whether you need to save money, reduce your workload, or keep plants indoors, the following gardening techniques are just a sampling of the many ways to grow your very own bountiful garden.

Barrel

Lidless plastic food-grade barrels or drums are set on raised supports. Before the barrel is filled with soil, slits are cut into the sides of the barrel and shaped into pockets. A PVC pipe is perforated with holes and set into the center and out of the bottom of the barrel as a delivery tool for watering, draining, fertilizing, and feeding the optional worm farm.

Strengths

Initial cost is moderate. Retains moisture, warms quickly, drains well, takes up little space, maximizes growing area, and repels burrowing rodents. Little weeding or back-bending required.

Weaknesses

Not always attractive, initially labor intensive, requires special tools to modify. Not generally suited for crops that are deep-rooted, large vining, or traditionally grown in rows, such as corn.

Hügelkultur

These permanent raised beds utilize decomposing logs and woody brush that have been stacked into a pyramidal form on top of the soil’s surface or in shallow trenches and then packed and covered with eight to ten inches of soil, compost, and well-rotted manure. The rotting wood encourages soil biota while holding and releasing moisture to plants, much like a sponge.

English pronunciation: “hoogle-culture.”

Strengths
Vertical form warms quickly, drains well, reduces watering needs, increases overall planting surface, and reduces bending chores. In time the rotting wood breaks down into humus-rich soil.

Weaknesses
Labor-intensive construction and mulch tends to slide down sides. Requires two to three years of nitrogen supplementation, repeated soaking, and filling sunken voids with soil. Voids can also be attractive to rodents and snakes in the first few years.

Hydroponic

Hydroponics is based on a closed (greenhouse) system relying on carefully timed circulation of nutrient-enriched water flowing through a soilless growing medium in which plants grow. Aerial parts are supported above the water by rafts and, at times, vertical supports. With the addition of fish tanks to the system, hydroponics becomes aquaponics.

Strengths
Customizable to any size. Versatile, efficient, productive, and weedless. Produce stays clean.

Weaknesses
Large systems are expensive and complicated to set up and maintain; require multiple inputs of heat, light, and nutrients; and are limited to certain crop types.

Lasagna

Based on sheet composting, lasagna gardens are built up in layers, starting with paper or cardboard that is placed on top of turf-covered or tilled

ground to smother weeds and feed ground worm activity. This is then covered in repeating layers of peat moss, compost, leaves, wood chips, manure, and yard waste (green, brown, green), which eventually break down into rich, humusy soil.

Strengths
Excellent natural method to enrich poor soils, utilizes organic waste, supports soil biota, and improves drainage while reducing the need for fertilizers and excessive watering.

Weaknesses
Initially labor intensive and the proper breakdown of bed materials takes months, so is not suited to “quick” gardening. Requires ready and abundant sources of clean, unsprayed, organic materials.

Ruth Stout

This “no work” garden is based on deep, permanent layers of progressively rotting straw mulch, which simultaneously builds soil, feeds plants, blocks weeds, and reduces watering. Seeds and plants are placed into the lower decomposed layers. Fresh straw is added as plants grow and kept at a depth of eight or more inches.

Strengths
No tilling, few weeds, reduced watering and fertilizing. Warms quickly in the spring and prevents winter heaving. An excellent method for rocky, sandy, or clay soils.

Weaknesses
Requires an abundance of straw each season, which can be expensive and difficult to transport, move, and store. Deep mulch may encourage burrowing rodents and provide shelter for slugs, insect pests, and diseases.

Soil Bag

This simple method utilizes one or more twenty- to forty-pound bags of commercial potting soil or topsoil simply laid out flat on turf, mulch, or wood pallets. A rectangular hole is cut into the top and drainage holes are punched through the bottom. A light dusting of fertilizer is mixed in and plants and seeds are sown.

Strengths

Super easy, weed-free, no-till garden and a great way to start an in-ground garden. Fun for kids and those without a yard.

Weaknesses

Limited to shallow-rooted crops, needs consistent watering and fertilizing, and may flood in heavy rains. Cats may find this an attractive litter box.

Straw Bale

One or more square, string-bound straw bales are placed cut side up either directly on the ground or on top of a weed barrier, soaked with water for several days or even months, and treated with nitrogen to help speed the decomposition of the straw. Alternatively, bales can be overwintered in place before using. Once ready, bales are parted down the center, filled with soil and compost, and planted with seeds or starts.

Strengths

Good on poor soils, even concrete. No tilling required, few weeds, handicap accessible, versatile, easy to configure, and renter-friendly. Spent bales make excellent mulch.

Weaknesses

Straw bales can be expensive, heavy, and difficult to transport. These gardens can initially be labor intensive, require frequent watering and fertilizing, and must be replaced every one or two seasons. Nitrogen from treated bales can leach into the local environment and affect the watershed.

Square Foot

This modern take on French Intensive gardening utilizes raised beds filled with a special soilless blend enclosed in a box frame that is further divided into twelve-by-twelve-inch squares, or one square foot. Each square is planted or seeded based on the correct spacing requirements of each plant. Large crops, like tomatoes, are planted one to a square, while small crops like radishes are planted sixteen to a square.

Strengths

Proper plant spacing utilizes space, increases yields, and reduces weeds. Adding trellises increases growing capacity. Raised beds drain well, warm quickly, hold mulch, look tidy, and are easy to mow around.

Weaknesses

Initial construction is expensive, labor intensive, and often impermanent. Requires frequent watering in dry spells, and not all crops are suitable. Grids can be tedious to use and do not remove the gardener’s need to learn proper plant spacing.

Vertical

Vertical gardens make use of nontraditional gardening space in two ways. The first is by training vining and climbing plants onto trellises, arbors, or fences and growing in raised beds, pots, urns, or tubs. The second is by firmly securing containers, troughs, rain gutters, or vertical garden felt pockets onto permanent frames supported by fences, walls, or other sturdy vertical structures. These gardens are typically irrigated by automatic drip or hydroponic systems. Soilless options are available.

Strengths

Attractive and weed-free indoor-outdoor garden perfect for small yards, renters, and disabled persons. Helps hide ugly structures and views and defines outdoor spaces.

Weaknesses

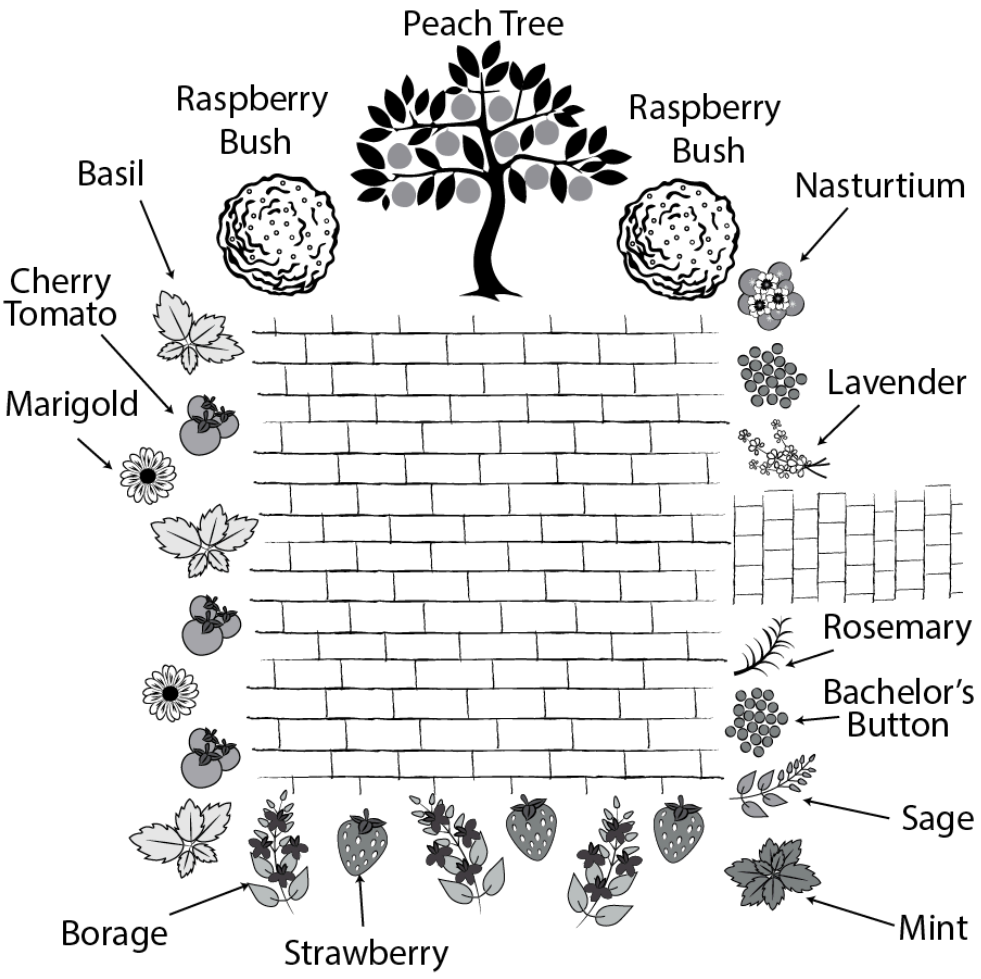
Construction of large systems and very sturdy structures can be initially expensive or labor intensive. Not conducive to all garden crops and requires frequent and consistent applications of moisture and fertilizer.

[contents]

2026 Themed Garden Plans

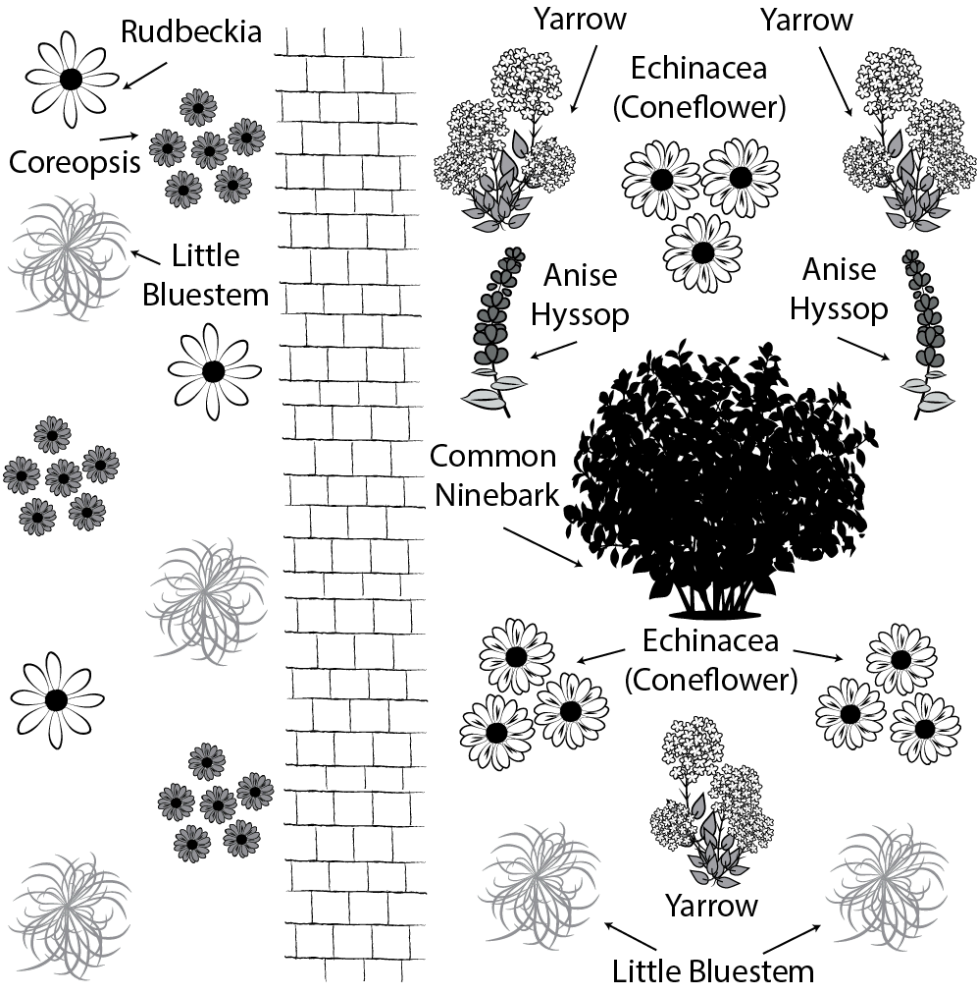
Cocktail Garden

A cocktail garden is an excellent choice whether you want to host parties or enjoy relaxing evenings in the backyard. Cocktails and mocktails are so much better with ingredients picked just moments before. As you'll want to use these ingredients fresh, I recommend laying this garden out around a patio, porch, or outdoor seating area for easy access. Alternatively, you could stretch it along a pathway. Gardeners in the Northern Hemisphere should place taller backdrop plants like raspberries or peach trees on the northern side so that they don't shade the seating area and other parts of the garden. Fill in the other edges with an exciting mix of sun-loving and flavorful herbs, fruits, vegetables, and edible flowers, including cherry tomatoes, mint, basil, marigolds, and strawberries.



Drought-Tolerant Garden

Gardening is tough, and it's even more challenging when dealing with drought conditions. This garden is set up for a front yard with a path left open to reach your porch or door, but you could easily adjust the layout to work in a backyard or other space. On one side, the garden is centered around common ninebark, an excellent native shrub with year-round interest. The rest of the space is filled with a simple repeating layout of stunning low-maintenance plants like coreopsis, echinacea, yarrow, and little bluestem. To add more color to your layout, look at different cultivars. For example, white yarrow is quite common, but yarrow also comes in reds, pinks, yellows, and creams. You can even find mixed packs of seeds. Coreopsis and echinacea (coneflower) also come in various colors.



Cottage Garden

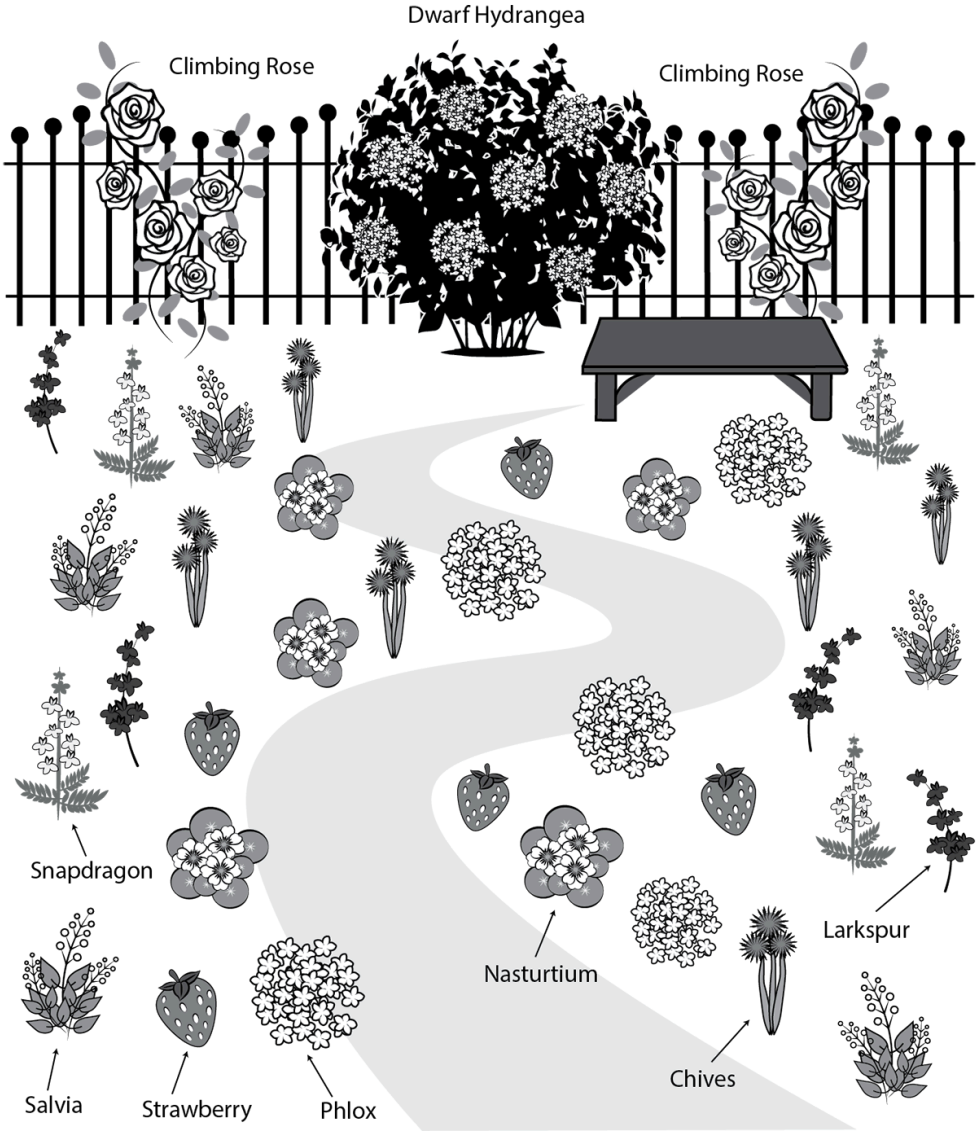
Cottage gardens bring a dreamy, whimsical element to your landscape. Originally inspired by small British gardens where laborers crammed flowers, vegetables, and herbs into their small lots, cottage gardens are a great way to make use of a small space. They allow you to bend the rules and blend your favorite plants to create a more natural look.

One of the best tips for cottage gardeners is to think about a black-and-white photograph of your garden. Would it still have enough variation in height, texture, and form to be attractive?

In this design, I chose a broad mix of plants, including shrubs, vines, tall flowers like larkspur, and low-creeping flowers like phlox. Repeating a few

clumps of each helps the garden feel unified while maintaining its wild look.

I also incorporated as many plants as possible that blur the line between edible and ornamental. Chives, nasturtiums, and strawberries are obvious choices that are great for salads. Depending on the variety, you can also enjoy edible salvia as an herb or garnish and edible rose hips and petals. Feel free to play with your favorite varieties for this design.



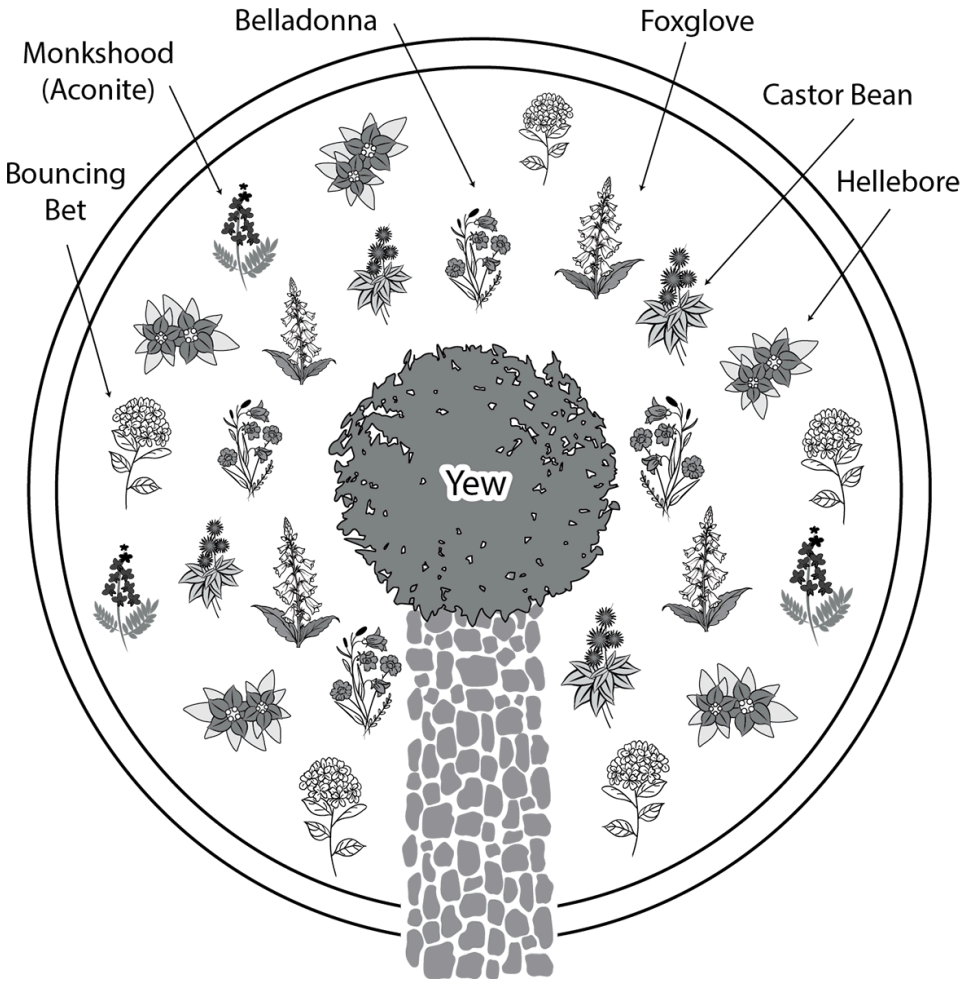
Poison Garden

It’s not all sunshine and roses! This garden has a darker side. The plants chosen for this garden may be beautiful, but they can also be deadly. If you have curious young children, pets, or livestock, this may not be a suitable garden for you. While all these plants are safe to touch, they can cause severe illness or even death if ingested.

The garden is designed as a keyhole around a yew tree. The ancient Celts used the yew’s leaves for ritualistic suicide and to create poison arrows. The tree is surrounded by equally ominous plants, like hellebore, which may have played a role in ending the life of Alexander the Great; monkshood (also known as aconite or wolfsbane), which earned one of its names as wolf poison in ancient Greece; and belladonna, the beautiful lady whose compounds were used to create psychedelic “flying ointments,” poisons for armies facing the Romans, and possibly deadly last meals for Emperors Claudius and Augustus.

Foxglove and bouncing bet are two of the tamer plants in this garden. While they’re unsafe to ingest, they have some handy uses. Bouncing bet makes an excellent cleaner and is also called soapwort. Foxglove contains digitalis and was one of the first medicinal discoveries for treating heart failure, though it may also have killed Edward IV.

The last plant, castor bean, may be the most widely used poison on this list. Ricin, a compound derived from castor beans, has been used throughout history as a biological weapon and is one of the most toxic compounds known. In modern times, it has been the weapon of choice in several murder attempts against political officials.


Belladonna
Foxglove
Monkshood
(Aconite)
Castor Bean
Bouncing
Bet
Hellebore
Yew

[contents]

Planning Your 2026 Garden

Prepare your soil by loosening and fertilizing. Use the grid on the next page, enlarging on a photocopier if needed, to sketch your growing space and identify sunny and shady areas.

Plot Shade and Sun

For new beds, watch your yard or growing space for a day, checking at regular intervals (such as once an hour), and note the areas that receive sun and shade. These will shift over the course of your growing season. Plant accordingly.

Diagram Your Space

Consider each plant's spacing needs before planting. Vining plants, such as cucumbers, will sprawl out and require trellising or a greater growing area than root crops like carrots. Be sure to avoid pairing plants that naturally compete or harm each other (see the Companion Planting Guide on page 252).

Also consider if your annual plants need to be rotated. Some herbs will reseed, some can be planted in the same place year after year, and some may need to be moved after depleting the soil of certain nutrients during the previous growing season.

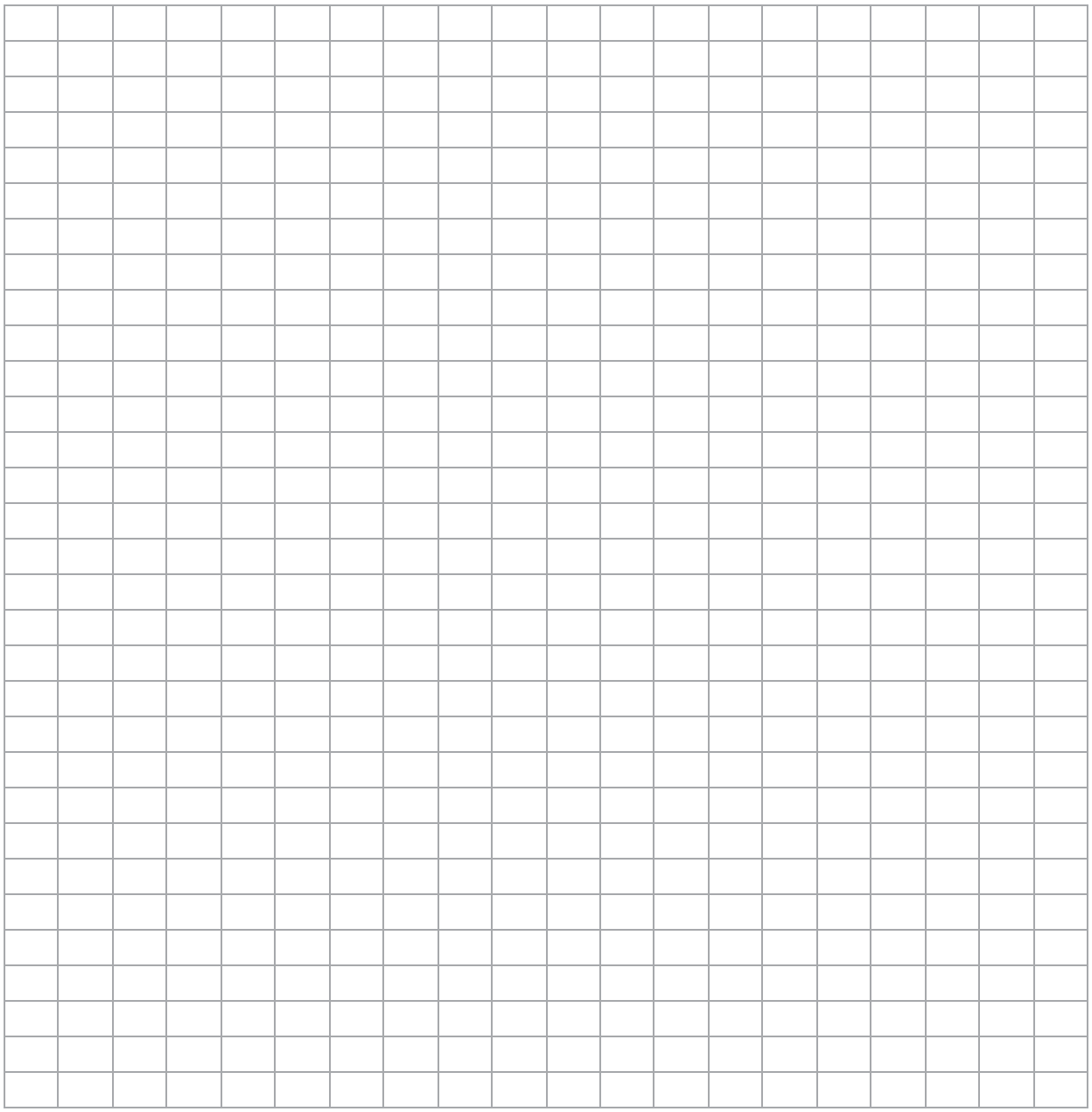
Determine Your Last Spring Frost Date

Using data from previous years, estimate the last spring frost date for your area and note what you'll need to plant before or after this date. Refer to seed packets, plant tags, and experts at your local garden center or university extension for the ideal planting time for each plant. Keep track of frost dates here:

_____	_____	_____	_____
2023	2024	2025	2026

Growing Space Grid

= _____ inches/feet



[contents]

January

Task	*Date*

Notes:

JANUARY

				1	2	○
4	5	6	7	8	9	◑
11	12	13	14	15	16	17
●	19	20	21	22	23	24
◐	26	27	28	29	30	31

Plan Recipes for Your Harvest

While the days are dark and cold, curl up in a cozy spot to dream up your vegetable garden. Wake your inspiration as you decide on what seeds you are going to order by beginning a collection of recipes to use your garden's future surplus.

February

Task	*Date*

Notes:

FEBRUARY

○	2	3	4	5	6	7
8	◑	10	11	12	13	14
15	16	●	18	19	20	21
22	23	◐	25	26	27	28

Fruit Tree Care

Feed established fruit trees before their first leaf buds open. Use a balanced fertilizer that has equal amounts of nitrogen, phosphorus, and potassium (like 10-10-10) to ensure robust growth and increased production.

March

Task	*Date*

Notes:

MARCH

1	2	○	4	5	6	7
8	9	10	◑	12	13	14
15	16	17	●	19	20	21
22	23	24	◐	26	27	28
29	30	31				

⬚ *equinox*

Collect Fireplace Ashes

If you have a fireplace, collect the wood ash and use it to feed your asparagus plants and stone fruit trees. Wood ash is a good source of potassium and contains trace minerals to feed plants that thrive in alkaline soils.

April

Task	*Date*

Notes:

APRIL

			○	2	3	4
5	6	7	8	9	◑	11
12	13	14	15	16	●	18
19	20	21	22	◐	24	25
26	27	28	29	30		

Bright Spring Color

Plant peonies for big, bright spring blooms. Most garden peonies are herbaceous perennials that die back to the ground at the end of the growing season. Each spring they sprout and flower, providing early color for your flower garden.

May

Task	*Date*

Notes:

MAY

					○	2
3	4	5	6	7	8	◑
10	11	12	13	14	15	●
17	18	19	20	21	22	◐
24	25	26	27	28	29	30
○						

Clone Your Favorite Plant

Herbaceous plants can change a leaf node into a root node. Clip off a section of new growth that has 2–3 sets of leaves. Gently remove the lower leaves and tuck the cutting into soil. Water immediately. Set it in a shady protected place and keep moist.

June

Task	Date

Notes:

JUNE

	1	2	3	4	5	6
7	◑	9	10	11	12	13
●	15	16	17	18	19	20
◐	22	23	24	25	26	27
28	○	30				

solstice

The World's Most-Loved Vegetable?

Tomatoes are quick growers and abundant producers and come in as many as 10,000 different varieties. Tomatoes give the cook a wonderful nutrient-rich fruit to use raw or cooked. At the end of the growing season, pick the remaining fruit green and bring inside to ripen.

July

Task	*Date*

Notes:

JULY

			1	2	3	4
5	6	◑	8	9	10	11
12	13	●	15	16	17	18
19	20	◐	22	23	24	25
26	27	28	○	30	31	

Local Honey

Seek out a jar of local honey. Beekeepers harvest from late July to September. Honey is a natural cold remedy used to treat a cough and soothe a sore throat. Local raw honey is used to boost the immune system and may help lessen seasonal allergies.

August

Task	*Date*

Notes:

AUGUST

						1
2	3	4	◑	6	7	8
9	10	11	●	13	14	15
16	17	18	◐	20	21	22
23	24	25	26	27	○	29
30	31					

Share Your Harvest

Now is the time of fruitfulness. Use your bounty to build relationships. Share your abundance with neighbors and colleagues. Take extra flowers, fruit, or vegetables to an elder who can no longer keep a garden.

September

Task	*Date*

Notes:

SEPTEMBER

		1	2	3	◑	5
6	7	8	9	●	11	12
13	14	15	16	17	◐	19
20	21	22	23	24	25	○
27	28	29	30			

⬚ *equinox*

Cold-Weather Crops

After the hottest days have passed, it is time to start the fall garden. Plant lettuce, spinach, kale, root vegetables, or any of the crucifers. A simple cold frame can help extend the harvest into winter.

October

Task	*Date*

Notes:

OCTOBER

				1	2	◑
4	5	6	7	8	9	●
11	12	13	14	15	16	17
◐	19	20	21	22	23	24
25	○	27	28	29	30	31

Seed Gathering

Collect the seeds of favorite plants. Make sure they are clean and dry, then tuck them away in a dark, cool, dry place so that you can plant again in the next growing season.

November

Task	*Date*

Notes:

NOVEMBER

◑	2	3	4	5	6	7
8	●	10	11	12	13	14
15	16	◐	18	19	20	21
22	23	○	25	26	27	28
29	30					

Winterize Your Garden

As the weather cools, make plans to winterize your garden. Mulch perennials to help them better survive the winter. Bring in or cover potted plants and baskets before a cold snap.

December

Task	*Date*

Notes:

DECEMBER

		◑	2	3	4	5
6	7	●	9	10	11	12
13	14	15	16	◐	18	19
20	21	22	○	24	25	26
27	28	29	◑	31		

solstice

Keep a Record of Your Garden

Record your garden year. Jot down in your garden journal which of your plants performed the best and which had problems. Note which varieties were your favorites and what produce you got the most use out of so that you can build on your experience.

[contents]

Gardening by the Moon

It is believed that the moon's gravitational pull extends beyond Earth's oceans, affecting the moisture in the soil, seeds, and plants. Some gardeners utilize this timing to strategically plan various gardening activities. Here's how:

Gardening by Moon Phase

During the waxing moon (from new moon to full moon), plant annuals, crops that need to be seeded anew each year, and those that produce their yield above the ground. During the waning moon (from full moon to new moon), plant biennials, perennials, and bulb and root plants. As a rule, these are plants that produce below the ground.

These are not hard-and-fast divisions. If you can't plant during the first quarter, plant during the second, and vice versa. There are many plants that seem to do equally well planted in either quarter, such as watermelon, hay, and cereals and grains.

First Quarter (Waxing): The first quarter begins with the new moon. Plant annuals that produce their yield above the ground and are generally of the leafy kind that produce their seed outside their fruit. Examples are asparagus, broccoli, brussels sprouts, cabbage, cauliflower, celery, cress, endive, kohlrabi, lettuce, parsley, and spinach. Cucumbers are an exception, as they do best in the first quarter rather than the second, even though the seeds are inside the fruit. Also in the first quarter, plant cereals and grains.

Second Quarter (Waxing): Plant annuals that produce their yield above ground and are generally the viney types that produce their seed inside the fruit. Examples include beans, eggplant, melons, peas, peppers, pumpkins, squash, and tomatoes.

Third Quarter (Waning): The third quarter begins with the full moon. Plant biennials, perennials, and bulb and root plants. Also plant trees, shrubs,

berries, beets, carrots, onions, parsnips, peanuts, potatoes, radishes, rhubarb, rutabagas, strawberries, turnips, winter wheat, and grapes.

Fourth Quarter (Waning): This is the best time to cultivate, turn sod, pull weeds, and destroy pests of all kinds, especially when the moon is in the barren signs of Aries, Leo, Virgo, Gemini, Aquarius, and Sagittarius.

Gardening by Moon Sign

Some gardeners include the influence of the twelve astrological signs in their lunar gardening as well. The moon changes sign roughly every two and a half days.

Moon in Aries: Barren and dry. Used for destroying noxious growth, weeds, pests, and so on, and for cultivating.

Moon in Taurus: Productive and moist. Used for planting many crops, particularly potatoes and root crops, and when hardiness is important. Also used for lettuce, cabbage, and similar leafy vegetables.

Moon in Gemini: Barren and dry. Used for destroying noxious growths, weeds, and pests, and for cultivation.

Moon in Cancer: Very fruitful and moist. This is the most productive sign, used extensively for planting and irrigation.

Moon in Leo: Barren and dry. This is the most barren sign, used only for killing weeds and for cultivation.

Moon in Virgo: Barren and moist. Good for cultivation and destroying weeds and pests.

Moon in Libra: Semi-fruitful and moist. Used for planting many crops and producing good pulp growth and roots. A very good sign for flowers and vines. Also used for seeding hay, corn fodder, etc.

Moon in Scorpio: Very fruitful and moist. Nearly as productive as Cancer; used for the same purposes. Especially good for vine growth and sturdiness.

Moon in Sagittarius: Barren and dry. Used for planting onions, for seeding hay, and for cultivation.

Moon in Capricorn: Productive and dry. Used for planting potatoes, tubers, etc.

Moon in Aquarius: Barren and dry. Used for cultivation and destroying noxious growths, weeds, and pests.

Moon in Pisces: Very fruitful and moist. Used along with Cancer and Scorpio, and especially good for root growth.

Planting Guide for Moon Phase and Sign

The following table shows how to combine the moon's quarters and signs to choose the best planting dates for crops, flowers, and trees.

Plant	*Quarter*	*Sign*
Annuals	1st or 2nd	*See specific entry in this table*
Apple trees	2nd or 3rd	Cancer, Pisces, Taurus
Asparagus	1st	Cancer, Scorpio, Pisces
Barley	1st or 2nd	Cancer, Pisces, Libra, Capricorn
Beans	2nd	Cancer, Pisces, Libra, Taurus
Beets	3rd	Cancer, Pisces, Libra, Capricorn
Berries	2nd	Cancer, Scorpio, Pisces
Biennials	3rd or 4th	*See specific entry*
Broccoli	1st	Cancer, Scorpio, Pisces, Libra
Brussels sprouts	1st	Cancer, Scorpio, Pisces, Libra
Buckwheat	1st or 2nd	Capricorn
Bulbs	3rd	Cancer, Scorpio, Pisces
Bulbs for seed	2nd or 3rd	*See specific entry*
Cabbage	1st	Cancer, Scorpio, Pisces, Taurus
Cantaloupes	1st or 2nd	Cancer, Scorpio, Pisces, Taurus
Carrots	3rd	Cancer, Scorpio, Pisces, Libra
Cauliflower	1st	Cancer, Scorpio, Pisces, Libra
Celery	1st	Cancer, Scorpio, Pisces
Cereals	1st or 2nd	Cancer, Scorpio, Pisces, Libra
Chard	1st or 2nd	Cancer, Scorpio, Pisces
Chicory	2nd or 3rd	Cancer, Scorpio, Pisces
Clover	1st or 2nd	Cancer, Scorpio, Pisces
Corn	1st	Cancer, Scorpio, Pisces
Corn for fodder	1st or 2nd	Libra
Cress	1st	Cancer, Scorpio, Pisces
Cucumbers	1st	Cancer, Scorpio, Pisces
Deciduous trees	2nd or 3rd	Cancer, Scorpio, Pisces, Virgo
Eggplant	2nd	Cancer, Scorpio, Pisces, Libra
Endive	1st	Cancer, Scorpio, Pisces, Libra
Flowers	1st	Taurus, Virgo, Cancer, Scorpio, Pisces, Libra
Garlic	3rd	Libra, Taurus, Pisces
Gourds	1st or 2nd	Cancer, Scorpio, Pisces, Libra
Melons	2nd	Cancer, Scorpio, Pisces

Plant	*Quarter*	*Sign*
Onion seeds	2nd	Scorpio, Cancer, Sagittarius
Onion sets	3rd or 4th	Libra, Taurus, Pisces, Cancer
Parsley	1st	Cancer, Scorpio, Pisces, Libra
Parsnips	3rd	Cancer, Scorpio, Pisces, Taurus
Peach trees	2nd or 3rd	Taurus, Libra, Virgo
Peanuts	3rd	Cancer, Scorpio, Pisces
Pear trees	2nd or 3rd	Taurus, Libra, Virgo
Perennials	3rd	*See specific entry*
Plum trees	2nd or 3rd	Taurus, Libra, Virgo
Pole beans	1st or 2nd	Scorpio
Potatoes	3rd	Cancer, Scorpio, Taurus, Libra
Pumpkins	2nd	Cancer, Scorpio, Pisces, Libra
Quinces	1st or 2nd	Capricorn
Radishes	3rd	Libra, Taurus, Pisces, Capricorn
Rice	1st or 2nd	Scorpio
Roses	1st or 2nd	Cancer
Rutabagas	3rd	Cancer, Scorpio, Pisces, Taurus
Sage	3rd	Cancer, Scorpio, Pisces
Salsify	1st or 2nd	Cancer, Scorpio, Pisces
Spinach	1st	Cancer, Scorpio, Pisces
Squash	2nd	Cancer, Scorpio, Taurus, Libra
Strawberries	3rd	Cancer, Scorpio, Pisces
String beans	1st or 2nd	Taurus
Sunflowers	2nd, 3rd, 4th	Cancer, Libra
Tomatoes	2nd	Cancer, Scorpio, Pisces, Capricorn
Tulips	1st or 2nd	Libra, Virgo
Turnips	3rd	Cancer, Scorpio, Pisces, Taurus
Watermelon	1st or 2nd	Cancer, Scorpio, Pisces, Libra

2026 Moon Signs and Phases

Cross-reference the following month-by-month tables with the planting guide for moon phase and sign to determine the recommended planting

times for 2026. Gray rows indicate the day of a phase change. All times are in Eastern Standard and Eastern Daylight Time, so be sure to adjust for your time zone.

January 2026

Date	*Sign*	*Phase*
1 Thu.	Gemini	2nd
2 Fri. 8:09 am	Cancer	2nd
3 Sat.	Cancer	Full 5:03 am
4 Sun. 8:44 am	Leo	3rd
5 Mon.	Leo	3rd
6 Tue. 11:57 am	Virgo	3rd
7 Wed.	Virgo	3rd
8 Thu. 7:06 pm	Libra	3rd
9 Fri.	Libra	3rd
10 Sat.	Libra	4th 10:48 am
11 Sun. 5:55 am	Scorpio	4th
12 Mon.	Scorpio	4th
13 Tue. 6:34 pm	Sagittarius	4th
14 Wed.	Sagittarius	4th
15 Thu.	Sagittarius	4th
16 Fri. 6:47 am	Capricorn	4th
17 Sat.	Capricorn	4th
18 Sun. 5:18 pm	Aquarius	New 2:52 pm
19 Mon.	Aquarius	1st
20 Tue.	Aquarius	1st
21 Wed. 1:50 am	Pisces	1st
22 Thu.	Pisces	1st
23 Fri. 8:26 am	Aries	1st
24 Sat.	Aries	1st
25 Sun. 1:05 pm	Taurus	2nd 11:47 pm
26 Mon.	Taurus	2nd
27 Tue. 3:55 pm	Gemini	2nd
28 Wed.	Gemini	2nd
29 Thu. 5:32 pm	Cancer	2nd
30 Fri.	Cancer	2nd
31 Sat. 7:09 pm	Leo	2nd

February 2026

Date	*Sign*	*Phase*
1 Sun.	Leo	Full 5:09 pm
2 Mon. 10:21 pm	Virgo	3rd
3 Tue.	Virgo	3rd
4 Wed.	Virgo	3rd
5 Thu. 4:33 am	Libra	3rd
6 Fri.	Libra	3rd
7 Sat. 2:13 pm	Scorpio	3rd
8 Sun.	Scorpio	3rd
9 Mon.	Scorpio	4th 7:43 am
10 Tue. 2:22 am	Sagittarius	4th
11 Wed.	Sagittarius	4th
12 Thu. 2:44 pm	Capricorn	4th
13 Fri.	Capricorn	4th
14 Sat.	Capricorn	4th
15 Sun. 1:17 am	Aquarius	4th
16 Mon.	Aquarius	4th
17 Tue. 9:09 am	Pisces	New 7:01 am
18 Wed.	Pisces	1st
19 Thu. 2:39 pm	Aries	1st
20 Fri.	Aries	1st
21 Sat. 6:31 pm	Taurus	1st
22 Sun.	Taurus	1st
23 Mon. 9:29 pm	Gemini	1st
24 Tue.	Gemini	2nd 7:28 am
25 Wed.	Gemini	2nd
26 Thu. 12:11 am	Cancer	2nd
27 Fri.	Cancer	2nd
28 Sat. 3:17 am	Leo	2nd

March 2026

Date	*Sign*	*Phase*
1 Sun.	Leo	2nd
2 Mon. 7:34 am	Virgo	2nd
3 Tue.	Virgo	Full 6:38 am
4 Wed. 1:56 pm	Libra	3rd
5 Thu.	Libra	3rd
6 Fri. 11:01 pm	Scorpio	3rd
7 Sat.	Scorpio	3rd
8 Sun.	Scorpio	3rd
9 Mon. 11:37 am	Sagittarius	3rd
10 Tue.	Sagittarius	3rd
11 Wed.	Sagittarius	4th 5:38 am
12 Thu. 12:07 am	Capricorn	4th
13 Fri.	Capricorn	4th
14 Sat. 11:13 am	Aquarius	4th
15 Sun.	Aquarius	4th
16 Mon. 7:16 pm	Pisces	4th
17 Tue.	Pisces	4th
18 Wed.	Pisces	New 9:23 pm
19 Thu. 12:03 am	Aries	1st
20 Fri.	Aries	1st
21 Sat. 2:35 am	Taurus	1st
22 Sun.	Taurus	1st
23 Mon. 4:19 am	Gemini	1st
24 Tue.	Gemini	1st
25 Wed. 6:33 am	Cancer	2nd 3:18 pm
26 Thu.	Cancer	2nd
27 Fri. 10:10 am	Leo	2nd
28 Sat.	Leo	2nd
29 Sun. 3:33 pm	Virgo	2nd
30 Mon.	Virgo	2nd
31 Tue. 10:51 pm	Libra	2nd

April 2026

Date	*Sign*	*Phase*
1 Wed.	Libra	Full 10:12 pm
2 Thu.	Libra	3rd
3 Fri. 8:11 am	Scorpio	3rd
4 Sat.	Scorpio	3rd
5 Sun. 7:32 pm	Sagittarius	3rd
6 Mon.	Sagittarius	3rd
7 Tue.	Sagittarius	3rd
8 Wed. 8:04 am	Capricorn	3rd
9 Thu.	Capricorn	3rd
10 Fri. 7:55 pm	Aquarius	4th 12:52 am
11 Sat.	Aquarius	4th
12 Sun.	Aquarius	4th
13 Mon. 4:55 am	Pisces	4th
14 Tue.	Pisces	4th
15 Wed. 10:04 am	Aries	4th
16 Thu.	Aries	4th
17 Fri. 11:58 am	Taurus	New 7:52 am
18 Sat.	Taurus	1st
19 Sun. 12:18 pm	Gemini	1st
20 Mon.	Gemini	1st
21 Tue. 1:00 pm	Cancer	1st
22 Wed.	Cancer	1st
23 Thu. 3:41 pm	Leo	2nd 10:32 pm
24 Fri.	Leo	2nd
25 Sat. 9:04 pm	Virgo	2nd
26 Sun.	Virgo	2nd
27 Mon.	Virgo	2nd
28 Tue. 5:03 am	Libra	2nd
29 Wed.	Libra	2nd
30 Thu. 3:02 pm	Scorpio	2nd

May 2026

Date	*Sign*	*Phase*
1 Fri.	Scorpio	Full 1:23 pm
2 Sat.	Scorpio	3rd
3 Sun. 2:33 am	Sagittarius	3rd
4 Mon.	Sagittarius	3rd
5 Tue. 3:06 pm	Capricorn	3rd
6 Wed.	Capricorn	3rd
7 Thu.	Capricorn	3rd
8 Fri. 3:27 am	Aquarius	3rd
9 Sat.	Aquarius	4th 5:10 pm
10 Sun. 1:39 pm	Pisces	4th
11 Mon.	Pisces	4th
12 Tue. 8:04 pm	Aries	4th
13 Wed.	Aries	4th
14 Thu. 10:31 pm	Taurus	4th
15 Fri.	Taurus	4th
16 Sat. 10:23 pm	Gemini	New 4:01 pm
17 Sun.	Gemini	1st
18 Mon. 9:46 pm	Cancer	1st
19 Tue.	Cancer	1st
20 Wed. 10:48 pm	Leo	1st
21 Thu.	Leo	1st
22 Fri.	Leo	1st
23 Sat. 2:57 am	Virgo	2nd 7:11 am
24 Sun.	Virgo	2nd
25 Mon. 10:34 am	Libra	2nd
26 Tue.	Libra	2nd
27 Wed. 8:53 pm	Scorpio	2nd
28 Thu.	Scorpio	2nd
29 Fri.	Scorpio	2nd
30 Sat. 8:45 am	Sagittarius	2nd
31 Sun.	Sagittarius	Full 4:45 am

June 2026

Date	*Sign*	*Phase*
1 Mon. 9:19 pm	Capricorn	3rd
2 Tue.	Capricorn	3rd
3 Wed.	Capricorn	3rd
4 Thu. 9:46 am	Aquarius	3rd
5 Fri.	Aquarius	3rd
6 Sat. 8:43 pm	Pisces	3rd
7 Sun.	Pisces	3rd
8 Mon.	Pisces	4th 6:00 am
9 Tue. 4:33 am	Aries	4th
10 Wed.	Aries	4th
11 Thu. 8:28 am	Taurus	4th
12 Fri.	Taurus	4th
13 Sat. 9:06 am	Gemini	4th
14 Sun.	Gemini	New 10:54 pm
15 Mon. 8:14 am	Cancer	1st
16 Tue.	Cancer	1st
17 Wed. 8:05 am	Leo	1st
18 Thu.	Leo	1st
19 Fri. 10:37 am	Virgo	1st
20 Sat.	Virgo	1st
21 Sun. 4:55 pm	Libra	2nd 5:55 pm
22 Mon.	Libra	2nd
23 Tue.	Libra	2nd
24 Wed. 2:43 am	Scorpio	2nd
25 Thu.	Scorpio	2nd
26 Fri. 2:41 pm	Sagittarius	2nd
27 Sat.	Sagittarius	2nd
28 Sun.	Sagittarius	2nd
29 Mon. 3:19 am	Capricorn	Full 7:57 pm
30 Tue.	Capricorn	3rd

July 2026

Date	*Sign*	*Phase*
1 Wed. 3:33 pm	Aquarius	3rd
2 Thu.	Aquarius	3rd
3 Fri.	Aquarius	3rd
4 Sat. 2:30 am	Pisces	3rd
5 Sun.	Pisces	3rd
6 Mon. 11:07 am	Aries	3rd
7 Tue.	Aries	4th 3:29 pm
8 Wed. 4:31 pm	Taurus	4th
9 Thu.	Taurus	4th
10 Fri. 6:42 pm	Gemini	4th
11 Sat.	Gemini	4th
12 Sun. 6:46 pm	Cancer	4th
13 Mon.	Cancer	4th
14 Tue. 6:35 pm	Leo	New 5:44 am
15 Wed.	Leo	1st
16 Thu. 8:07 pm	Virgo	1st
17 Fri.	Virgo	1st
18 Sat.	Virgo	1st
19 Sun. 12:57 am	Libra	1st
20 Mon.	Libra	1st
21 Tue. 9:35 am	Scorpio	2nd 7:06 am
22 Wed.	Scorpio	2nd
23 Thu. 9:07 pm	Sagittarius	2nd
24 Fri.	Sagittarius	2nd
25 Sat.	Sagittarius	2nd
26 Sun. 9:44 am	Capricorn	2nd
27 Mon.	Capricorn	2nd
28 Tue. 9:46 pm	Aquarius	2nd
29 Wed.	Aquarius	Full 10:36 am
30 Thu.	Aquarius	3rd
31 Fri. 8:14 am	Pisces	3rd

August 2026

Date	*Sign*	*Phase*
1 Sat.	Pisces	3rd
2 Sun. 4:37 pm	Aries	3rd
3 Mon.	Aries	3rd
4 Tue. 10:35 pm	Taurus	3rd
5 Wed.	Taurus	4th 10:21 pm
6 Thu.	Taurus	4th
7 Fri. 2:08 am	Gemini	4th
8 Sat.	Gemini	4th
9 Sun. 3:46 am	Cancer	4th
10 Mon.	Cancer	4th
11 Tue. 4:38 am	Leo	4th
12 Wed.	Leo	New 1:37 pm
13 Thu. 6:18 am	Virgo	1st
14 Fri.	Virgo	1st
15 Sat. 10:20 am	Libra	1st
16 Sun.	Libra	1st
17 Mon. 5:46 pm	Scorpio	1st
18 Tue.	Scorpio	1st
19 Wed.	Scorpio	2nd 10:46 pm
20 Thu. 4:30 am	Sagittarius	2nd
21 Fri.	Sagittarius	2nd
22 Sat. 4:59 pm	Capricorn	2nd
23 Sun.	Capricorn	2nd
24 Mon.	Capricorn	2nd
25 Tue. 5:02 am	Aquarius	2nd
26 Wed.	Aquarius	2nd
27 Thu. 3:04 pm	Pisces	2nd
28 Fri.	Pisces	Full 12:18 am
29 Sat. 10:38 pm	Aries	3rd
30 Sun.	Aries	3rd
31 Mon.	Aries	3rd

September 2026

Date	*Sign*	*Phase*
1 Tue. 4:01 am	Taurus	3rd
2 Wed.	Taurus	3rd
3 Thu. 7:47 am	Gemini	3rd
4 Fri.	Gemini	4th 3:51 am
5 Sat. 10:30 am	Cancer	4th
6 Sun.	Cancer	4th
7 Mon. 12:49 pm	Leo	4th
8 Tue.	Leo	4th
9 Wed. 3:35 pm	Virgo	4th
10 Thu.	Virgo	New 11:27 pm
11 Fri. 7:52 pm	Libra	1st
12 Sat.	Libra	1st
13 Sun.	Libra	1st
14 Mon. 2:44 am	Scorpio	1st
15 Tue.	Scorpio	1st
16 Wed. 12:41 pm	Sagittarius	1st
17 Thu.	Sagittarius	1st
18 Fri.	Sagittarius	2nd 4:44 pm
19 Sat. 12:55 am	Capricorn	2nd
20 Sun.	Capricorn	2nd
21 Mon. 1:14 pm	Aquarius	2nd
22 Tue.	Aquarius	2nd
23 Wed. 11:24 pm	Pisces	2nd
24 Thu.	Pisces	2nd
25 Fri.	Pisces	2nd
26 Sat. 6:23 am	Aries	Full 12:49 pm
27 Sun.	Aries	3rd
28 Mon. 10:40 am	Taurus	3rd
29 Tue.	Taurus	3rd
30 Wed. 1:26 pm	Gemini	3rd

October 2026

Date	*Sign*	*Phase*
1 Thu.	Gemini	3rd
2 Fri. 3:54 pm	Cancer	3rd
3 Sat.	Cancer	4th 9:25 am
4 Sun. 6:54 pm	Leo	4th
5 Mon.	Leo	4th
6 Tue. 10:53 pm	Virgo	4th
7 Wed.	Virgo	4th
8 Thu.	Virgo	4th
9 Fri. 4:11 am	Libra	4th
10 Sat.	Libra	New 11:50 am
11 Sun. 11:21 am	Scorpio	1st
12 Mon.	Scorpio	1st
13 Tue. 8:59 pm	Sagittarius	1st
14 Wed.	Sagittarius	1st
15 Thu.	Sagittarius	1st
16 Fri. 8:57 am	Capricorn	1st
17 Sat.	Capricorn	1st
18 Sun. 9:40 pm	Aquarius	2nd 12:13 pm
19 Mon.	Aquarius	2nd
20 Tue.	Aquarius	2nd
21 Wed. 8:35 am	Pisces	2nd
22 Thu.	Pisces	2nd
23 Fri. 3:53 pm	Aries	2nd
24 Sat.	Aries	2nd
25 Sun. 7:35 pm	Taurus	2nd
26 Mon.	Taurus	Full 12:12 am
27 Tue. 9:02 pm	Gemini	3rd
28 Wed.	Gemini	3rd
29 Thu. 10:06 pm	Cancer	3rd
30 Fri.	Cancer	3rd
31 Sat.	Cancer	3rd

November 2026

Date	*Sign*	*Phase*
1 Sun. 12:18 am	Leo	4th 3:28 pm
2 Mon.	Leo	4th
3 Tue. 3:28 am	Virgo	4th
4 Wed.	Virgo	4th
5 Thu. 9:38 am	Libra	4th
6 Fri.	Libra	4th
7 Sat. 5:40 pm	Scorpio	4th
8 Sun.	Scorpio	4th
9 Mon.	Scorpio	New 2:02 am
10 Tue. 3:36 am	Sagittarius	1st
11 Wed.	Sagittarius	1st
12 Thu. 3:27 pm	Capricorn	1st
13 Fri.	Capricorn	1st
14 Sat.	Capricorn	1st
15 Sun. 4:24 am	Aquarius	1st
16 Mon.	Aquarius	1st
17 Tue. 4:19 pm	Pisces	2nd 6:48 am
18 Wed.	Pisces	2nd
19 Thu.	Pisces	2nd
20 Fri. 12:52 am	Aries	2nd
21 Sat.	Aries	2nd
22 Sun. 5:10 am	Taurus	2nd
23 Mon.	Taurus	2nd
24 Tue. 6:10 am	Gemini	Full 9:53 am
25 Wed.	Gemini	3rd
26 Thu. 5:51 am	Cancer	3rd
27 Fri.	Cancer	3rd
28 Sat. 6:21 am	Leo	3rd
29 Sun.	Leo	3rd
30 Mon. 9:13 am	Virgo	3rd

December 2026

Date	*Sign*	*Phase*
1 Tue.	Virgo	4th 1:09 am
2 Wed. 3:04 pm	Libra	4th
3 Thu.	Libra	4th
4 Fri. 11:35 pm	Scorpio	4th
5 Sat.	Scorpio	4th
6 Sun.	Scorpio	4th
7 Mon. 10:07 am	Sagittarius	4th
8 Tue.	Sagittarius	New 7:52 pm
9 Wed. 10:09 pm	Capricorn	1st
10 Thu.	Capricorn	1st
11 Fri.	Capricorn	1st
12 Sat. 11:06 am	Aquarius	1st
13 Sun.	Aquarius	1st
14 Mon. 11:36 pm	Pisces	1st
15 Tue.	Pisces	1st
16 Wed.	Pisces	1st
17 Thu. 9:34 am	Aries	2nd 12:43 am
18 Fri.	Aries	2nd
19 Sat. 3:30 pm	Taurus	2nd
20 Sun.	Taurus	2nd
21 Mon. 5:27 pm	Gemini	2nd
22 Tue.	Gemini	2nd
23 Wed. 4:58 pm	Cancer	Full 8:28 pm
24 Thu.	Cancer	3rd
25 Fri. 4:12 pm	Leo	3rd
26 Sat.	Leo	3rd
27 Sun. 5:13 pm	Virgo	3rd
28 Mon.	Virgo	3rd
29 Tue. 9:27 pm	Libra	3rd
30 Wed.	Libra	4th 1:59 pm
31 Thu.	Libra	4th

[contents]

Contributors

Anne Sala is a freelance writer located in Minnesota. She writes, gardens, and cooks alongside her two children and husband. One of them doesn't like mashed potatoes, the other doesn't like them roasted, and the third doesn't like them in soups, but they all like them fried—and in Italian hot chocolate!

Annie Burdick is a writer and editor living in Portland, Oregon. She has written for numerous websites, magazines, and anthologies on wildly varied topics. She is also the author of *Unconscious Bias*, *Bring the Wild Into Your Garden*, *Gardening for Mind*, *Body*, *and Soul*, and *365 Days of Calm*, published by an imprint of Hachette UK. She spends most of her spare time reading and having adventures around the Pacific Northwest. Find her at annieburdickfreelance.com.

Charlie Rainbow Wolf is an old hippie who's been studying the weird ways of the world for over fifty years. She's happiest when she's got her hands in mud, either making pottery in the "Artbox" or tending to things in the yarden (yard + garden = yarden). Astrology, tarot, and herbs are her greatest interests, but she's dabbled in most metaphysical topics because life always has something new to offer. She enjoys cooking WFPB recipes and knitting traditional cables and patterns, and she makes a wicked batch of fudge. Charlie lives in central Illinois with her very patient husband and her beloved Great Danes.

Diana Rajchel is an urban gardener, author of titles esoteric, and shameless clotheshorse. She lives on an eccentric property nestled in the heart of Kalamazoo, Michigan, with her partner, bonus children, and all sorts of curiosities, at times including her opinionated dog, Nora. She is author of *Hex Twisting* and *Urban Magick* among other titles. Her books have been translated into five languages and counting.

Elizabeth Barrette lives in central Illinois and enjoys magical crafts, historic religions, and gardening for wildlife. She has written columns on

Pagan practice, speculative fiction, gender studies, and social and environmental issues. Her book *Composing Magic* explains how to combine writing and spirituality. Visit her blog at ysabetwordsmith.dreamwidth.org.

James Kambos is a writer, artist, and herbalist. He's written many articles on folk magic and herbs. He raises herbs and wildflowers in his southern Ohio garden.

JD Walker is an avid student of herbalism and gardening. She has written a regular garden column for thirty years. She is an award-winning author, journalist, and magazine editor and a frequent contributor to the Llewellyn annuals. Her first book, *A Witch's Guide to Wildcrafting*, published by Llewellyn Publications, was released in spring 2021. Her new book, *Under the Sacred Canopy*, is out now.

Jill Henderson is a backwoods herbalist, author, artist, and world traveler with a penchant for wild edible and medicinal plants, culinary herbs, and nature ecology. She is a longtime contributor to *Llewellyn's Herbal Almanac* and *Acres USA* magazine and is the author of *The Healing Power of Kitchen Herbs, A Journey of Seasons*, and *The Garden Seed Saving Guide*. Visit Jill's blog at ShowMeOz.wordpress.com.

Jordan Charbonneau is a homesteader, hiker, animal lover, and forager. She attended Sterling College (Vermont), where she double majored in ecology and environmental humanities. Today, Jordan lives in a little off-grid cabin she and her husband Scott built in the hills of West Virginia. Together they grow organic vegetables and care for tons of animals. You can find more of her writing at www.rabbitridgefarmwv.com.

Kathy Martin is the longtime author of the blog *Skippy's Vegetable Garden*, a journal of her vegetable gardens, which has won awards including *Horticulture Magazine*'s Best Gardening Blog. She helps run Aurelia's Garden Inc., a nonprofit microfarm that donates to food pantries. Kathy is a Master Gardener and a retired biomedical researcher who lives near Boston with her family, dogs, chickens, and honeybees.

Laurel Woodward is the author of *Kitchen Witchery*, *Backyard Garden Witchery*, and *Wellness Witchery*. She is a writer, gardener, and cook living a magical life with her family and a menagerie of animals on a ten-acre homestead in the Pacific Northwest. Visit her at www.liminallandscapes.com.

Linda Raedisch has been writing books and articles for Llewellyn since 2011. If you want more cookie recipes, or more information about cubeb and galingale, read her latest Llewellyn book *The Secret History of Christmas Baking*. If you're more of a Halloween person, you can try her indie science fiction novel *Turn Left at the Mooncrow Skeleton* (October 2023). When not writing, Linda enjoys gardening, visiting museums, and sticking her nose into other people's kitchens.

Mandana Boushee is an Iranian-American community herbalist, storyteller, earthworker, and joyous member of the mycelial network of liberatory tenders and lovers. She is a cofounder and educator at Wild Gather, School of Herbal Studies, where she has the deep pleasure of sharing her love and experiences in plant medicine and community care. Through her shared wisdom and initiatives in the Mahicantuck (Hudson) Valley, she seeks to offer her community access to equitable care, fertile land, plant medicine, and herbal education.

Mason Olonade is a father, farmer, artist, and husband in Charlotte, NC. Professionally trained as a molecular biologist, his study of life continues through his work as a volunteer farmer in Charlotte and with the Family Pattern Project at the Pattern House of Olonade. Whether working with disadvantaged youth in the cornfields or with clients at his studio, he cultivates the most important crop, the *n'krabea*, or destiny, with care.

Marilyn I. Bellemore, a Rhode Island native, splits her time living in the Green Mountains of rural, central Vermont and at her farmhouse across from the ocean on scenic Prince Edward Island, Canada. She is a teacher, author, and member of the Screen Actors Guild for twenty-five years. Among her many interests, Marilyn enjoys moviegoing, collecting sea glass

on PEI, visiting museums, hiking, and futhering her herbal studies.

Mireille Blacke, RD, CD-N, is a licensed alcohol and drug counselor, registered dietitian, and freelance health and nutrition writer from the Hartford, Connecticut, area. She has written numerous articles for Llewellyn's annuals since 2014. Mireille worked in rock radio for two decades before shifting her career focus to media psychology, behavioral health nutrition, and addiction counseling. Her Bengal cats consume most of her free time and sanity.

Monica Crosson is the author of *A Year in the Enchanted Garden*, *Wild Magical Soul*, *The Magickal Family*, and *Summer Sage*. She is a Master Gardener who lives in the beautiful Pacific Northwest, happily digging in the dirt and tending her raspberries with her family and their small menagerie of farm animals. Monica is a regular contributor to Llewellyn's annuals as well as *Enchanted Living Magazine* and *Witchology Magazine*.

Natalie Zaman is the author of *Color and Conjure* and *Magical Destinations of the Northeast*. A regular contributor to various Llewellyn annual publications, she also writes the recurring feature Wandering Witch for *Witches & Pagans* magazine. When not on the road, she's busy tending her magical back garden. Visit Natalie online at nataliezaman.blogspot.com.

Rachael Witt is a clinical community herbalist, gardener, and teacher. She is the founder of Wildness Within, an herbal business that offers plant-focused apprenticeships and classes, herbal consultations, and handmade remedies. Rachael is dedicated to simple, seasonal living with the land and teaching people hands-on-earth skills. She lives and stewards the Highlands Homestead in Duvall, Washington. Find more at WildnessWithinLiving.com.

Raechel Henderson is a Pagan and witch, following an eclectic and independent path. She contributes articles to Llewellyn's almanacs and calendars, and she blogs about magic, creativity, and living by your own patterns. Raechel is a dual-class seamstress/shieldmaiden and has been sewing professionally since 2008. She is also the author of *Sew Witchy*, *The*

Scent of Lemon & Rosemary, *The Natural Home Wheel of the Year*, and *The Witch's Wardrobe*. Visit her on Instagram at @idiorhythmic.

Sara Mellas is an artist and writer living in Nashville, Tennessee. She's authored three books and has written about music, astrology, metaphysics, and kitchen arts for several publications. She holds a master's degree in music education and vocal performance and currently works as a commercial and editorial food stylist. Outside of writing and styling, she can be found singing, reading, practicing as a psychic astrologer, and spending time with equine familiars.

Susan Pesznecker is a mother, writer, nurse, and college English professor living in the beautiful Pacific Northwest with her poodles. An amateur herbalist, Sue loves reading, writing, cooking, travel, and anything having to do with the outdoors. Her previous works include *Crafting Magick with Pen and Ink*, *The Magickal Retreat*, and *Yule*. She's a regular contributor to the Llewellyn annuals. Follow her on Instagram at @SusanPesznecker.

Teresa Peterson, *Utuhu Cistinna Win*, is Sisseton Wahpeton Dakota and citizen of the Upper Sioux Community. Teresa is the author of *Perennial Ceremony: Lessons and Gifts from a Dakota Garden*. She and her uncle Walter LaBatte Jr. authored *Voices from Pejuhutazizi: Dakota Stories and Storytellers*. She is also the author of *Grasshopper Girl*, a children's book, and has contributed to *Voices Rising: Native Women Writers* and *The Racism Issue* of *The Yellow Medicine Review*. Teresa earned her doctorate in education from the University of Minnesota Duluth. Her passion is digging in her garden that overlooks the Mni Sota River valley and feeding friends and family.

[contents]

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Contents
Introduction to Llewellyn’s Herbal Almanac
GROWING AND GATHERING
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How Sweet It Is: Preserving and Fermenting with Honey
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Postpartum Herbs and Lore
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How to Make a Compost Tumbler
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PLANT PROFILES
Plant Profiles
Potato
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January
February
March
April
May
June
July
August
September
October
November
December
Gardening by the Moon
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